STANFORD UNIVERSITY LIBRARY
JUL 18 1928

THE SCHOLARSHIP OF TEACHERS IN SECONDARY SCHOOLS

A THESIS
SUBMITTED TO THE FACULTY OF THE GRADUATE SCHOOL
OF THE UNIVERSITY OF MINNESOTA

BY

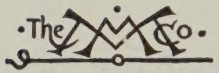
PERCIVAL W. HUTSON

STANFORD UNIVERSITY LIBRARIES
WITHDRAWN

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY
JUNE 1925

3781
M66H
UNCLASSED

THE SCHOLARSHIP OF TEACHERS IN SECONDARY SCHOOLS



THE MACMILLAN COMPANY
NEW YORK · BOSTON · CHICAGO · DALLAS
ATLANTA · SAN FRANCISCO

MACMILLAN & CO., LIMITED
LONDON · BOMBAY · CALCUTTA
MELBOURNE

THE MACMILLAN CO. OF CANADA, LTD.
TORONTO

THE SCHOLARSHIP OF TEACHERS IN SECONDARY SCHOOLS

AN ESSAY OFFERED IN COMPETITION FOR THE JULIUS AND ROSA SACHS PRIZE 1926

BY

PERCIVAL W. HUTSON

ASSISTANT PROFESSOR OF SECONDARY EDUCATION
UNIVERSITY OF PITTSBURGH, PITTSBURGH, PENNSYLVANIA

New York
THE MACMILLAN COMPANY
1927
All rights reserved

PRINTED IN THE UNITED STATES OF AMERICA

COPYRIGHT, 1927,
BY THE MACMILLAN COMPANY.

Set up and electrotyped. Published May, 1927.

Norwood Press
J. S. Cushing Co. — Berwick & Smith Co.
Norwood, Mass., U.S.A.

ACKNOWLEDGMENT

For guidance in planning and prosecuting the investigation which is reported in this essay the writer acknowledges with gratitude his indebtedness to Dr. L. V. Koos, Professor of Secondary Education, University of Minnesota.

Digitized by the Internet Archive
in 2025

https://archive.org/details/scholarshipoftea0000perc

CONTENTS

CHAPTER		PAGE
I.	INTRODUCTION	1
II.	THE DAILY PROGRAMS OF TEACHERS IN PENNSYLVANIA AND CALIFORNIA AND THEIR SPECIAL TRAINING FOR THE SUBJECTS THEY TEACH	6
	A. Description of the Method of Investigation and Its Pertinence to the Problem	6
	B. The Number of Subjects Teachers Are Required to Teach	12
	C. The Number of Classes and of Distinct Preparations in the Teachers' Daily Programs	20
	D. Number and Character of the Subject-Combinations Being Taught	27
	E. Special Training in Higher Institutions which Teachers Have Had for Their Teaching Subjects	42
	F. Conclusions, with Recommendations	53
III.	THE SPECIALIZED PREPARATION OF TEACHERS OF THE SOCIAL STUDIES	63
IV.	THE SPECIALIZED PREPARATION OF TEACHERS OF ENGLISH	87
	A. Standards of Preparation	87
	B. The Specialized Preparation that English Teachers Have	92
	C. Summary, with Recommendations	108
V.	THE PRACTICES OF TEACHER-TRAINING INSTITUTIONS IN GUIDING THE CONTENT TRAINING OF THEIR STUDENTS	111
	A. Practices of Separate Four-Year Colleges	112

CHAPTER PAGE

B. Practices of Universities 128

C. Practices of State Teachers' Colleges 140

D. Summary, with Recommendations 144

VI. Present Practices in the Certification of High School Teachers 154

VII. Reasons Why High School Teachers Are Assigned Subjects for which They Are not Prepared . . 168

VIII. Concluding Comment 181

Bibliography 191

Appendices 199

Index 203

LIST OF TABLES

		PAGE
I.	Numerical and percentage distribution, according to size of staff, of the schools canvassed	8
II.	Percentage distribution of high schools according to the size of enrollment	9
III.	Number of schools from which returns were received	11
IV.	Average enrollments of Pennsylvania and California high schools, grouped according to size of staff	12
V*a*.	Number of different subjects the teachers are teaching (Pennsylvania)	14
V*b*.	Number of different subjects the teachers are teaching (California)	14
VI.	Number of different subjects the teachers have taught (including those they are now teaching)	19
VII*a*.	Percentage distribution of teachers according to the number of classes per day on their programs (Pennsylvania)	22
VII*b*.	Percentage distribution of teachers according to the number of classes per day on their programs (California)	23
VIII*a*.	Percentage distributions of teachers according to the number of daily preparations they must make (Pennsylvania)	26
VIII*b*.	Percentage distributions of teachers according to the number of daily preparations they must make (California)	27
IX*a*.	Percentage distributions of the various subjects to show the extent to which they appear singly and in combination in schools of the size indicated (Pennsylvania)	28

PAGE

IX*b*. Percentage distributions of the various subjects to show the extent to which they appear singly and in combination in schools of the size indicated (California) . . 31

X. Recurring two-subject combinations 36

XI. Recurring three-subject combinations 37

XII. Numbers and percentages of teachers who teach single subjects and combinations of subjects . . . 38

XIII. Percentage representation of relative frequency with which the various subjects appear in combination with each other (Pennsylvania) 40

XIV. Semester-hours of preparation in higher institutions for subjects taught 45

XV. Percentages of teachers who have college degrees . . 50

XVI. Percentage distribution of teachers of general science according to the number of sciences in which they have had some collegiate training 51

XVII. Percentages of teachers of general science who have had some collegiate training in each of the natural sciences, with the range of hours of training shown for each science 52

XVIII. Semester-hours of preparation in higher institutions for the subjects taught 67

XIX. Distribution of Pennsylvania and California teachers of unified social science according to the number of social sciences in which they have had some training in higher institutions 69

XX. Numerical and percentage distribution, according to the size of high school in which they were teaching in 1923–1924, of those Minnesota teachers of social studies who graduated in the five-year period, 1919–1923, from four Minnesota colleges and from the University of Minnesota 70

XXI. Percentage distributions of the 172 teachers of social studies according to the number of semester-hours they have taken in each of the six fields . . . 72

PAGE

XXII. Percentage distributions of the teachers of each of the six fields according to the number of semester-hours of preparation taken in the particular field being taught 74

XXIII. Percentage distribution of the 172 teachers of social studies according to the number of fields in which they have had at least six hours of collegiate training 77

XXIV. Numerical and percentage distributions of the teachers who have taken 18 or more hours of history, according to the number of history fields in which they have met the six-hour minimum 77

XXV. Numerical and percentage distributions of the teachers who have taken 18 or more hours of social science, according to the number of social science fields in which they have met the six-hour minimum 78

XXVI. The courses taken in the field of social studies by 88 graduates of four colleges and 84 graduates of the University of Minnesota, all teachers of social studies, with the frequencies of enrollment for each course 79

XXVII. Numerical and percentage distributions of 211 English teachers, according to the extent of their training in English 93

XXVIII*a*. Percentage distributions of 41 teachers of English (graduates of the University of Minnesota) who have taken less than 24 semester-hours of English, according to the number of semester-hours they have taken in the several fields of English . . 94

XXVIII*b*. Percentage distributions of 15 teachers of English (graduates of four colleges) who have taken less than 24 semester-hours of English, according to the number of semester-hours they have taken in the several fields of English 94

XXIX*a*. Percentage distributions of 14 teachers of English (graduates of the University of Minnesota) who have taken from 24 to 35 semester-hours of English,

PAGE

according to the number of semester-hours they have taken in the several fields of English . . 96

XXIX*b*. Percentage distributions of 52 teachers of English (graduates of four colleges) who have taken from 24 to 35 semester-hours of English, according to the number of semester-hours they have taken in the several fields of English 97

XXX. Distribution of 52 teachers of English (graduates of four colleges) with specialized training of from 24 to 35 semester-hours, according to the number of desired fields of English with which they have had training contact 99

XXXI*a*. Percentage distributions of 43 teachers of English (graduates of the University of Minnesota) who have taken 36 or more semester-hours of English, according to the number of semester-hours they have taken in the several fields of English . . 101

XXXI*b*. Percentage distributions of 46 teachers of English (graduates of four colleges) who have taken 36 or more semester-hours of English, according to the number of semester-hours they have taken in the several fields of English 102

XXXII. Distribution of teachers of English with specialized training of 36 or more hours, according to the number of desired fields of English with which they have had training contact 103

XXXIII. Classified list of English courses taken by 98 graduates of the University of Minnesota and 113 graduates of four colleges, with the frequencies of enrollment for each course and the average number of credits earned 105

XXXIV. States in which the colleges are located . . . 113

XXXV. Types of catalogue recognition of the teacher-training function 115

PAGE

XXXVI. Number of institutions employing each type of advisory system for each of the college years . . 118

XXXVII. Practices followed by sixty North Central and Western colleges in securing intensive study of a given field 122

XXXVIII. Majors permitted in 44 North Central and Western colleges having departments of education, their frequency of appearance, and distributions of semester-hour requirements for each major . . 123

XXXIX. Prescription of minors in the 51 institutions which prescribe majors 126

XL. Number of hours prescribed for minors . . . 127

XLI. Restrictions on selection of minor 127

XLII. Curricula for the training of high school teachers published in the catalogues of 16 universities, with the frequency of appearance of each 129

XLIII. List of subject-combinations advised, with the frequency of their mention 132

XLIV. Majors permitted in 25 North Central and Western universities, their frequency of appearance, and the distribution of semester-hour requirements for each major 137

XLV. University practices in administering the minor . 139

XLVI. The curricula for the training of high school teachers published in the catalogues of 16 state teachers' colleges, with the frequency of the appearance of each 141

XLVII. Majors permitted in 28 North Central and Western teachers' colleges, with the frequency of the appearance of each 143

XLVIII. General academic training required for teachers of academic subjects 157

XLIX. Pedagogical training required for teachers of academic and special subjects 159

PAGE

L. Data relating to certificates for teaching the special subjects 160

LI. Reasons why the various subjects are assigned to teachers whose specialized preparation is inadequate for teaching them, with frequencies of mention . 171

LII. Percentage distributions of reasons why teachers are assigned subjects for which their records of college credits indicate they are not prepared 178

LIST OF FIGURES

PAGE

1. Percentage distributions, according to the number of subjects being taught, of 82 Pennsylvania teachers in 3- and 4-teacher high schools and 70 Pennsylvania teachers in 9- and 10-teacher high schools 17
2. Distribution of teachers according to the number of subjects they have taught (California) 21
3. Percentages of teachers teaching more than five classes a day 24
4. Median number of daily preparations the teachers must make 25
5. Percentages of teachers teaching four or more subjects (Pennsylvania) 34
6. Percentages of 87 Pennsylvania and 22 California teachers of unified social science who have had training in higher institutions in none, one, two, or all three of the social sciences 68
7. Percentages of 172 Minnesota teachers of social studies who have taken seven semester-hours or more in each of the six fields named 73
8. Percentage distribution of 172 Minnesota teachers of social studies according to the number of fields in which they have had at least six hours of collegiate training 76
9. Distribution of 52 teachers of English (graduates of four colleges) with specialized training of from 24 to 35 semester-hours, according to the number of desired fields of English with which they have had training contact 100
10. Distributions of 43 teachers of English (graduates of the University of Minnesota) and 46 teachers of English (graduates of four colleges) with specialized training of 36 hours or more, according to the number of desired fields of English with which they have had training contact . . . 104

THE SCHOLARSHIP OF TEACHERS IN SECONDARY SCHOOLS

CHAPTER I

INTRODUCTION

Of all the factors that govern the successful functioning of the educational organization, none is more important than the teacher's preparation for his work. This is attested to by the body of law and machinery which society has built up to control this factor and render it adequate to cope with the increasing complexity of the educational task. Teachers must be " certified " to have attained certain minimal standards of preparation, in order that expert service may be assured. The very existence of the " rules and regulations for certification " which are published by our state boards of education suggests quite pointedly that educational practices have in the past been modified and improved by the imposition of higher and higher requirements in the training of the teacher.

That we are far from having attained perfection in this respect is felt, at least vaguely, by all thinking persons in contact with the school situation. Owing to the lack of national control over our schools there is considerable variance of standards. While the sentiment in the country is generally favorable to four years of study beyond the high school as the minimum which can produce the scholarship adequate for high school teaching, there are at present many teachers of less preparation. Of the teachers of either academic or special

subjects who take up high school teaching for the first time in the fall, a considerable proportion will enter the ranks with only two years of training beyond the high school. The extent to which this is possible depends upon the certification practices of the various states and will be described with some exactness in one of the chapters of this essay.

But even teachers who have been in training for four years frequently do not possess the scholarship requisite for the positions they hold. The agencies for assisting teachers to find positions often see them take up tasks for which they are not prepared; superintendents are not able to find candidates with the necessary training, and consequently they engage people whose qualifications only approximate the desirable; principals assign programs for which they know the teachers are not properly fitted; teachers are frequently telling their schoolmates at conventions about their experiences in teaching subjects which they never studied; and very few children complete high school without having taken some subject under a teacher of whose inadequate preparation they were fully aware.

In the exposition of these deficiencies and the recommendation of remedial measures to which this essay is devoted, certain preliminary considerations should perhaps be set forth:

1. It is assumed that the teacher should be a person possessed of general culture, of broad interests, trained to view with sympathy and understanding the various strata of life. The purpose of the high school is primarily the achievement of a *general* education, and this cannot be accomplished by a staff, each of whose members is not catholic in his outlook.

2. For the particular subjects assigned him the teacher needs special preparation. General training will not suffice. It is assumed that the doctrine of specific training should apply to teachers as well as to the other professions; for in-

stance, the teacher of American literature should be trained in American literature. Thus we derive the true course of instruction for the teacher from an analysis of the duties he is called upon to perform.

3. While meditating the many ways of improving the scholarship of secondary school teachers, the reformer is bound first of all to be sure that the time, money, and effort now expended on the task are being utilized as wisely as possible. Before condemning the present machinery as insufficient and needing supplementation, he must study its operation to detect evidences of loss of power, of energy wrongly directed, of needless friction or duplication. From the vantage point of such an analysis he will be in a position to make sane recommendations for the improvement of teachers' scholarship.

This essay, then, will attempt to discover the extent and the quality of the scholarship which teachers now bring to their work and to make a critical study of our present practices in securing that scholarship. The remedial measures proposed will have to do first of all with a more efficient use of the time and the facilities for training now at our disposal.

The first investigation undertaken by the author in seeking to determine the scholarship of teachers now in service is a study of the training of high school teachers in California and Pennsylvania, with reference to the positions they were holding and the subjects they were teaching. In its method, the study parallels earlier pieces of research by Koos and Woody for the state of Washington,[1] and by the present author for the state of Minnesota.[2] Data from the Washington and Min-

[1] Koos, L. V., and Woody, Clifford. "The Training of Teachers in the Accredited High Schools of the State of Washington." *Eighteenth Yearbook of the National Society for the Study of Education*, 213–257.

[2] "Training of the High-School Teachers of Minnesota," *Educational Monograph No. 3.* Minneapolis: College of Education, University of Minnesota, 1923.

nesota studies, as they will be designated, will be introduced frequently for purposes of comparison. The facts gathered from these four states, located in different sections of the country, constitute a sampling which goes far toward apprising us of the scholarship of teachers over large portions of the nation. The method of study and the data gathered, together with their interpretation, will be presented in Chapter II.

To achieve the benefits of a more diagnostic measurement than that employed in the research reported in Chapter II, additional investigations of the specialized training of two groups of teachers have been made. These are teachers of the social studies including history, and teachers of English. The methods employed and the scholarship disclosed are recounted in Chapters III and IV.

In the belief that a study of the practices of the agencies responsible for the teacher's training might prove fruitful, it seemed desirable to study teacher-training policies of colleges and universities. Accordingly, Chapter V reports the practices of representative institutions of this sort. By studying these in conjunction with the requirements of the positions to which the teachers go, we are able to pass judgment on their success in securing the scholarship that counts.

One other group of agencies is very influential in determining the scholarship of the teacher. These are the certificating authorities. Education is a function of the state; the state therefore sets up school standards and dictates among other things the minimal scholastic qualifications of teachers for the various schools or subjects. It is thus obvious that the practices of the bodies exercising this important function are of vital concern in the study of this problem. What are these practices? To what degree are they responsible

for existent conditions? What changes might be made in them which would modify conditions in the right direction? It was with such questions in mind that the project reported in Chapter VI was carried out.

But the teacher's scholarship in any given field will not serve the children if his assignment is such that he is not teaching that field. Furthermore, if the position is such that the teacher must teach in several fields, it may be very difficult, obviously, to secure the desired specialized scholarship for all the tasks of so unspecialized a position. The extent to which these situations exist is reviewed at some length in Chapter II, for the study of the teaching position cannot be separated from the study of the teacher's preparation. The authorities that engage and assign teachers play an important rôle in this matter of scholarship, for they utilize it or fail to do so. If the teacher has not the requisite scholarship for one or more of the subjects that he teaches, he must have been assigned on the basis of some other qualification than that of scholarship. What could such other qualification be? It was in the hope of securing an answer to this and other relevant questions that an inquiry was addressed to high school principals. It is clear that plans for the promotion of scholarship in the teachers may well invite the coöperation of those who make the teaching positions.

From this introduction to the problem studied, it must be obvious that the writer has enjoyed the coöperation of a large number of individuals in the prosecution of this investigation. It is with deep appreciation that he acknowledges the aid of several hundred teachers and principals in California and Pennsylvania (forty-eight principals generously responded to two requests), of more than a hundred college and university deans, and of several college and university registrars.

CHAPTER II

THE DAILY PROGRAMS OF TEACHERS IN PENNSYLVANIA AND CALIFORNIA AND THEIR SPECIAL TRAINING FOR THE SUBJECTS THEY TEACH

A. Description of the Method of Investigation and Its Pertinence to the Problem

To the principals of four-year high schools having ten teachers or fewer were sent copies of the questionnaire form shown in Appendix A, a blank calling for the daily schedule of their schools and the teaching load of each member of the staff. To each teacher was sent the form shown in Appendix B, calling for a statement of training in terms of semester-hours, and also a statement of classes being taught.

The reasons for limiting the inquiry to high schools with a staff of the size indicated were, first, the impossibility of dealing with the very large number of cases that would have resulted from including high schools of all sizes, considering the time that could be devoted to this single project of the investigation; and, second, the fact that the findings in the Minnesota and Washington studies had made it clear that the most serious problems of the teachers' program and preparation appear in the smaller schools, where they get their first experience.

These two earlier state studies had divided the teachers into three groups, as follows: Group I, teachers in high schools with faculties of 30 or more; Group II, teachers in high schools with faculties of 11 to 29 inclusive; Group III,

teachers in high schools with faculties of 10 or fewer. The investigation of conditions in Pennsylvania and California was confined to teachers and schools comparable to those of Group III. This made possible comparisons with the earlier studies, as will be observed throughout this chapter.

For California, all the schools of the size indicated were solicited for their coöperation, the list being obtained from the most recently published state directory,[1] and consisting of 144 schools having 953 teachers, including teaching principals. The information obtained represented the schools in the year 1923–1924.

Pennsylvania publishes no school directory of such completeness as that of California, and the State Department of Public Instruction indicated that it had no reports from which one could easily secure a list of high schools of ten teachers or fewer. The writer was referred to the county superintendents and accordingly procured his list from those officials. The superintendents of 54 of the 66 counties of the state responded to the inquiry, reporting 324 high schools with 1788 teachers. All of these schools are accredited by the State Department of Public Instruction. It is not at all certain that the list of four-year high schools of ten teachers or fewer was complete for the 54 counties, because in some cases it seemed likely the superintendents did not report small high schools in independent districts. But there were probably very few of these. To the principals and teachers were sent the inquiries shown in Appendices A and B. In 1923–1924 Western Pennsylvania was thus canvassed, and in 1924–1925 the questionnaires were sent to Eastern Pennsylvania. The reason for thus dividing

[1] California State Board of Education, *Directory of Secondary Schools and Teachers Colleges for the School Year, 1921–1922.* Sacramento: California State Printing Office, 1922.

the state was the possibility of securing a sufficiently large number of replies from only one half of the state. But, after the returns came in, it seemed to be desirable for certain portions of the study to break the schools into four groups according to size of staff. Also, greater numbers were needed to insure the reliability of the findings. Accordingly, Eastern Pennsylvania was canvassed the following year. As there is no reason to believe that the slight distinction in time could have any bearing on the facts obtained, all Pennsylvania data are considered as if gathered at the same time.

TABLE I

NUMERICAL AND PERCENTAGE DISTRIBUTION, ACCORDING TO SIZE OF STAFF, OF THE SCHOOLS CANVASSED

SIZE OF SCHOOL	PENNSYLVANIA		CALIFORNIA	
	Number of schools	Per cent of schools	Number of schools	Per cent of schools
3- and 4-teacher . .	140	42.6	25	17.4
5- and 6-teacher . .	75	22.8	48	33.3
7- and 8-teacher . .	64	19.5	43	29.8
9- and 10-teacher . .	50	15.2	28	19.4
Total	329	100.1	144	99.9

Table I gives a numerical and percentage distribution, according to size of staff, of the schools canvassed. It is worth noting that Pennsylvania has a much larger proportion of 3- and 4-teacher high schools than California. The replies received, as may be judged from Table III, gave each size of high school a representation approximately proportionate to its numbers.

The question which naturally arises out of this explanation of the size of the high schools selected is, What proportion of the

high schools of the country have ten teachers or fewer? How important is it that we study high schools of the size indicated? And before we proceed with the analysis of the returns from the questionnaires in this project, we shall quote statistics to establish the extent of the problem of the high schools of the size under consideration.

While the writer has no knowledge of any classification of high schools over the country according to the number of teachers on their faculties, there are classifications according to the number of pupils and the size of the community. These demonstrate sufficiently well the number of schools and teachers of which the data to be here presented are representative. For example, from a table in one of the reports of the United States Bureau of Education [1] were derived the percentage distributions of schools, according to the enrollment, which comprise Table II.

TABLE II

PERCENTAGE DISTRIBUTION OF HIGH SCHOOLS ACCORDING TO SIZE OF ENROLLMENT

ENROLLMENT	UNITED STATES	CALIFORNIA	PENNSYLVANIA
1–50	50.48	16.36	56.44
51–100	24.53	23.27	16.90
101–150	8.74	16.73	7.55
151–200	4.39	10.54	5.23
201 and over	11.86	33.09	13.88
Total	100.00	99.99	100.00

Judging by Table IV, we might well assume that in Pennsylvania the schools of ten teachers or fewer would include all those with an enrollment of 200 or less. Such schools in

[1] *Bulletin*, 1920, No. 19, "Statistics of Public High Schools, 1917–1918," 17.

California would have a considerably smaller enrollment. Probably Pennsylvania would be more nearly representative of the country as a whole than California. With this approximate comparison in mind, we note in Table II that over 88 per cent of the high schools of the country have no more than 200 pupils, that the percentage in Pennsylvania is almost 86, and in California, about 67. Among the schools with enrollments of 1 to 50 there are no doubt included many with less than three teachers, of which large numbers are probably not giving four years of work. It is noticeable that only one sixth of the California high schools belong to this group of lowest enrollment, while the fraction is one half for the country as a whole and more than that for Pennsylvania. This evidence, and the frequency with which a California high school is entitled "union high school," point to the strong movement toward consolidation in that state.

We have at hand a statement concerning the extent of the small high school problem in another state. "Nearly three fifths of Indiana's high schools enroll each not more than 75 pupils; and approximately 600, or nearly three fourths of all, enroll each not more than 100 pupils." [1]

The number of teachers involved in these high schools of ten teachers or fewer may be judged by the data presented to be very large, but cannot be determined with exactness. However, from another report of the federal bureau we find that more than one half of the high school teachers of the country as a whole, almost one half of those in California, and almost one third of those in Pennsylvania are to be found in

[1] Prepared by E. B. Wetherow, under the direction of Benjamin J. Burris, "Plans for Obtaining Higher Efficiency and Lower Cost of Maintenance of Small High Schools," *Bulletin*, No. 56, 1922. State of Indiana, Department of Public Instruction. This bulletin is a summary of a report made by Professor Alexander Inglis, after a study of Indiana high schools.

high schools which are located in "rural or village communities of less than 2500 population (1910), or in such cities, towns, boroughs, or villages having populations of 2500 to 9999, as are supported by a rural taxing unit, that is, a unit larger than that determined by the corporate limits of the city proper."[1] This classification would no doubt include some high schools of more than ten teachers, but it would also miss some. At any rate, the figures presented make it clear that 80 or 90 per cent of the high schools of the country have fewer than ten teachers, and that they may very likely include half the high school teachers of the country, facts which should establish definitely the wide extent of the conditions to be set forth in this project.

TABLE III

NUMBER OF SCHOOLS FROM WHICH RETURNS WERE RECEIVED

SIZE OF STAFF	PENNSYLVANIA				CALIFORNIA			
	Full returns	No. of tchrs.	Partial returns	No. of tchrs.	Full returns	No. of tchrs.	Partial returns	No. of tchrs.
3- and 4-teacher	22	73	6	9	5	18	1	1
5- and 6-teacher	11	58	5	16	8	45	4	11
7- and 8-teacher	9	65	5	22	5	37	7	33
9- and 10-teacher	5	43	6	27	5	46	4	17
Total	47	239	22	74	23	146	16	62

The numbers of cases on which this study rests are given in Table III. The schools from which "full returns" were received were those sending in all the desired data from the principal and from all the teachers. These were particularly useful in another project described in Chapter VII. The schools sending in "partial returns" were for the most part

[1] United States Bureau of Education, *Bulletin*, 1922, No. 37, "Statistics of Public High Schools, 1919–1920," 9.

those which failed to return a filled blank for every teacher, or those from which one or more of the teachers failed to give all the desired information.

In the tables which follow it will be seen that the numbers of cases are seldom the same. This is due to the fact that the partial returns were utilized for whatever portions they could be. In one or two tables the numbers of teachers will be found to exceed even the total numbers mentioned in Table III. In such instances, the additional cases came from the daily schedules submitted by the principals.

TABLE IV

AVERAGE ENROLLMENTS OF PENNSYLVANIA AND CALIFORNIA HIGH SCHOOLS, GROUPED ACCORDING TO SIZE OF STAFF

SIZE OF STAFF	PENNSYLVANIA		CALIFORNIA	
	Number of schools	Avg. no. of pupils	Number of schools	Avg. no. of pupils
3- and 4-teacher . .	26	72.8	7	43.6
5- and 6-teacher . .	13	138.8	11	70.9
7- and 8-teacher . .	12	174.1	13	93.2
9- and 10-teacher .	8	193.1	9	129.1

Table IV is introduced at this point to describe in another respect the schools from which data were received. The fact that the Pennsylvania schools have nearly twice as large an enrollment per teacher as the California schools will be referred to later in explanation of certain findings.

B. THE NUMBER OF SUBJECTS TEACHERS ARE REQUIRED TO TEACH

Before data descriptive of the teacher's scholarship are presented, an adequate understanding of the teacher's work must be established. Before we are able properly to evaluate

the scholarship which the teachers have, we must know what scholarship is called for by high school teaching positions. Accordingly, this section and the one following are devoted to such exposition of the teacher's work as is pertinent to the investigation of scholarship.

Tables V*a* and V*b* below are tabulations designed to show the number of subjects being taught by teachers in high schools with different-sized staffs, as indicated. Before interpreting this table we should have a common understanding of the term " subject." As in the case of the Minnesota study, it was decided to follow the lines of cleavage most common in the college of liberal arts, and accordingly throughout this study each one of the following has been regarded as a subject: English, mathematics, Latin, German, French, Spanish, history, political science, economics, sociology, unified social science, chemistry, physics, botany, zoölogy, biology, physical geography and geology, astronomy, physiology, general science, agriculture, public speaking, home economics, shop and mechanical drawing, music, graphic arts, commercial subjects (other than economics), and physical education. The teacher of ancient, modern, and American history is therefore considered as teaching one subject, history, as is also the teacher of Latin I and Cæsar or the teacher of algebra and geometry. Community civics and problems of democracy, both being courses in unified social science, are considered as the same subject. But separate and distinct courses in economics, sociology, and political science are considered as separate subjects.

For the sake of a more analytical view of the situation, the teachers have been divided into four groups according to the size of the school staff. Thus the schools of different sizes may be compared. The numbers in parentheses just under

TABLE V*a*

NUMBER OF DIFFERENT SUBJECTS THE TEACHERS ARE TEACHING (PENNSYLVANIA)

Number of different subjects	3- and 4-teacher schools (82)	5- and 6-teacher schools (73)	7- and 8-teacher schools (85)	9- and 10-teacher schools (70)	All teachers together (310)
1	4.9	17.8	36.5	31.4	22.6
2	18.3	42.5	31.8	34.3	31.3
3	23.2	24.7	15.3	25.7	21.9
4	32.9	9.6	15.3	8.6	17.1
5	17.1	4.1	1.2		5.8
6	3.7	1.4			1.3
Total	100.1	100.1	100.1	100.0	100.0

TABLE V*b*

NUMBER OF DIFFERENT SUBJECTS THE TEACHERS ARE TEACHING (CALIFORNIA)

Number of different subjects	3- and 4-teacher schools (19)	5- and 6-teacher schools (56)	7- and 8-teacher schools (70)	9- and 10-teacher schools (62)	All teachers together (207)
1	5.3	8.9	25.7	33.9	21.7
2	15.8	19.6	21.5	25.8	21.7
3	26.3	30.4	32.9	27.4	29.9
4	21.0	33.9	11.4	9.7	17.9
5	21.0	7.1	8.6	3.2	7.7
6	10.5				1.0
Total	99.9	99.9	100.1	100.0	99.9

the column headings are the numbers of teachers on which the percentages are based. This device will be employed frequently in tables which give percentage distributions. Table V*a* is to be read as follows: Of the 82 teachers in 3- and 4-teacher schools, 4.9 per cent are teaching but one subject; in 5- and 6-teacher schools 17.8 per cent of the teachers are

teaching but one subject; and so across the table. Examining the percentage distribution for each group of schools, we see a distinct mode at four subjects in the smallest schools and a distinct mode at two subjects in the 5- and 6-teacher schools. In the smallest schools, over 50 per cent of the teachers are teaching four subjects or more. In the two largest groups about two thirds of the teachers teach either one or two subjects.

A comparison of Tables V*a* and V*b* shows that California teachers have slightly more subjects to teach than Pennsylvania teachers in schools of the same-sized staffs. For example, of the Pennsylvania teachers in 3- and 4-teacher schools, 20.8 per cent are teaching 5 or 6 subjects; in California the percentage is 31.5. In Pennsylvania schools of the next larger group, 15.1 per cent are teaching four or more subjects; in the corresponding California schools the percentage is 41.0. Similar differences may be noticed in the 7- and 8- and 9- and 10-teacher schools. Reasons for the greater complexity of the California teachers' schedules are not difficult to find. If the reader will turn back to Table IV, he will note that the California school of 9 or 10 teachers has a smaller enrollment than a 5- and 6-teacher school in Pennsylvania. These vast differences in enrollment per teacher mean that in Pennsylvania a teacher is more likely to have two or three sections of a given class than in a California school of the same-sized staff — hence, fewer subjects per teacher. Furthermore, the curricular offering in the smaller California schools is much more varied than in similarly staffed Pennsylvania schools. Later data will demonstrate this.

An examination of the totals columns of each state shows that in each the fraction of teachers who are teaching more than three subjects is about one fourth. The relatively large

proportion of Pennsylvania teachers in the 3- and 4-teacher column and the relatively small proportion of the California teachers in that column have so weighted the totals as to show the same percentage of teachers in each state with this heavy schedule. If California has more subjects per teacher than Pennsylvania in schools of the same-sized staff, she largely compensates for the difference by having fewer of the 3- and 4-teacher schools. The consolidation movement has largely eliminated the very smallest schools in California, as is shown in Tables I and II.

The Minnesota study revealed, for high schools of ten teachers or fewer, 30.2 per cent of the teachers teaching one subject, 28.4 per cent teaching two subjects, 23.5 per cent, three subjects, and 17.9 per cent, four or more subjects,[1] a slightly better situation than that presented by either Pennsylvania or California. The schools studied in the Minnesota group, however, were all accredited by the North Central Association of Colleges and Secondary Schools, and there were very few 3- and 4-teacher schools among them. There are schools of the latter size in Minnesota, but most of them are accredited only by the state university and the state department of education. Thus the Minnesota schools presented here for comparison are very probably of higher standing than those of California and Pennsylvania.

To make more graphic the contrast between 3- and 4-teacher and 9- and 10-teacher high schools in the respects under consideration, Figure 1 is here included, based on data from Table V*a*.

It must be clear from the evidence presented that there are many teaching positions in schools of the size investigated for which we cannot expect to have adequately prepared teachers,

[1] *Op. cit.*, 9.

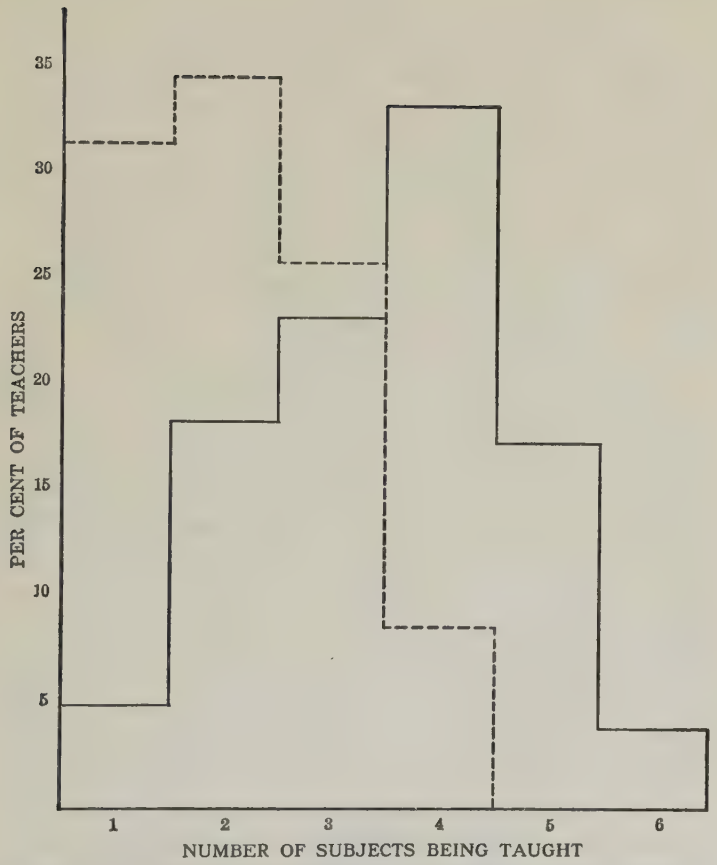


FIGURE 1. PERCENTAGE DISTRIBUTIONS, ACCORDING TO THE NUMBER OF SUBJECTS BEING TAUGHT, OF 82 PENNSYLVANIA TEACHERS IN 3- AND 4-TEACHER HIGH SCHOOLS (solid line) AND 70 PENNSYLVANIA TEACHERS IN 9- AND 10-TEACHER HIGH SCHOOLS (broken line).

because of the number of subjects involved. The Minnesota and Washington studies revealed a goodly sprinkling of such positions even in larger high schools. Of the 350 Minnesota teachers in schools having faculties of 11 to 29, who furnished data, 17.1 per cent were found to be teaching three or more subjects, and of the 307 in schools having faculties of 30 or more, who furnished data, 7.8 per cent were teaching three or more subjects.[1] When we come to consider college and university policies in the training of teachers (see Chapter V), we shall find that vast numbers of teachers are not being prepared for positions of such complexity. But a study of the teaching experience of the teachers of any state will demonstrate the very large percentages who get their first positions in schools of the size here investigated. In Washington, of the 126 teachers placed by the Recommendations Committee of the College of Education of the University of Washington for the school year 1916–1917, 81 per cent went to schools with faculties of ten or fewer, and three fifths of them taught three or more subjects.[2] Of the group of Minnesota teachers comparable with those presented for California and Pennsylvania, 25.8 per cent were in their first year of experience in an accredited high school, and 20.6 per cent were in their first year of any kind of teaching experience. Similar data were not requested from the teachers of Pennsylvania and California because it seemed unnecessary to reinforce the point. But it will be shown in another project of this investigation that of those 1923–1924 teachers of history and social science in Minnesota who had graduated from the University of Minnesota and the four leading colleges of the state during the five-year period 1919–1923, nearly 60 per cent were employed in schools with staffs of ten teachers or less.

[1] *Op. cit.*, 9. [2] Koos and Woody, *op. cit.*, 218–219.

TABLE VI

NUMBER OF DIFFERENT SUBJECTS THE TEACHERS HAVE TAUGHT
(Including those they are now teaching)

NUMBER OF DIFFERENT SUBJECTS	PENNSYLVANIA		CALIFORNIA		MINNESOTA	
	Number of teachers	Per cent of teachers	Number of teachers	Per cent of teachers	Number of teachers	Per cent of teachers
1	24	8.1	16	9.0	40	13.4
2	41	13.8	15	8.5	37	12.4
3	65	21.8	27	15.3	60	20.2
4	47	15.8	36	20.3	61	20.4
5	43	14.4	33	18.6	37	12.4
6	30	10.1	17	9.6	20	6.7
7	20	6.7	14	7.9	22	7.4
8	13	4.4	6	3.4	12	4.0
9	7	2.3	5	2.8	6	2.1
10	4	1.3	1	.6		
More than 10	4	1.3	7	4.0	3	1.0
Total	298	100.0	177	100.0	298	100.0

It will be noticed in Appendix B that the teachers were asked not only to name the subjects they were teaching during the current year, both first and second semesters, but also to name other high school subjects taught in previous years. From the number of subjects taught, past and present, Table VI was derived. For ease of comparison, data given by the Minnesota teachers in schools of ten teachers or fewer for the writer's study in 1921–1922 are included at the right-hand side of the table. While the percentages for California and Pennsylvania were computed for the schools of different-sized staffs, as in Tables V*a* and V*b*, they are not here exhibited because the differences are not significant. Brief study of Table VI shows that for the three states the percentage of teachers who have taught three subjects or more varies from

76 to 82, and from 35 to 45 per cent have taught five or more subjects. Tables developed in the Minnesota and Washington studies for teachers in the medium-sized and large high schools show figures similar to these — 60 to 70 per cent having taught three or more subjects, 21 to 39 per cent having taught five or more subjects.[1]

This indicates an extremely chaotic situation. It means that many teachers must frequently change their teaching subjects, while a few in the course of years almost make the round of the curricular offering. It means that in the rapid turnover of high school teachers — from 41 to 48 per cent of the high school teachers of the state of Wisconsin seek new positions annually [2] — they are constantly taking up new subjects. It means a shameful loss to the children of the benefits that surely accrue when the teacher can get the maximum value out of his experience by teaching the same subject or subjects again and again. It means that such efforts as we have made to give teachers special training for the subjects they are to teach too often are of no avail — the teachers do not know, nobody knows, what they are to teach. Clearly one way of promoting scholarship is to remove these conditions which are inimical to it.

Figure 2 is a graphic representation of the California data in Table VI.

C. The Number of Classes and of Distinct Preparations in the Teachers' Daily Programs

Significant elements in the teacher's load are the number of classes a day and the number of distinct daily preparations to

[1] Koos and Woody, *op. cit.*, 216; and Hutson, *op. cit.*, 9.

[2] Anderson, C. J. *The Status of Teachers in Wisconsin*, 116–117. Madison, Wisconsin: Department of Public Instruction, 1923.

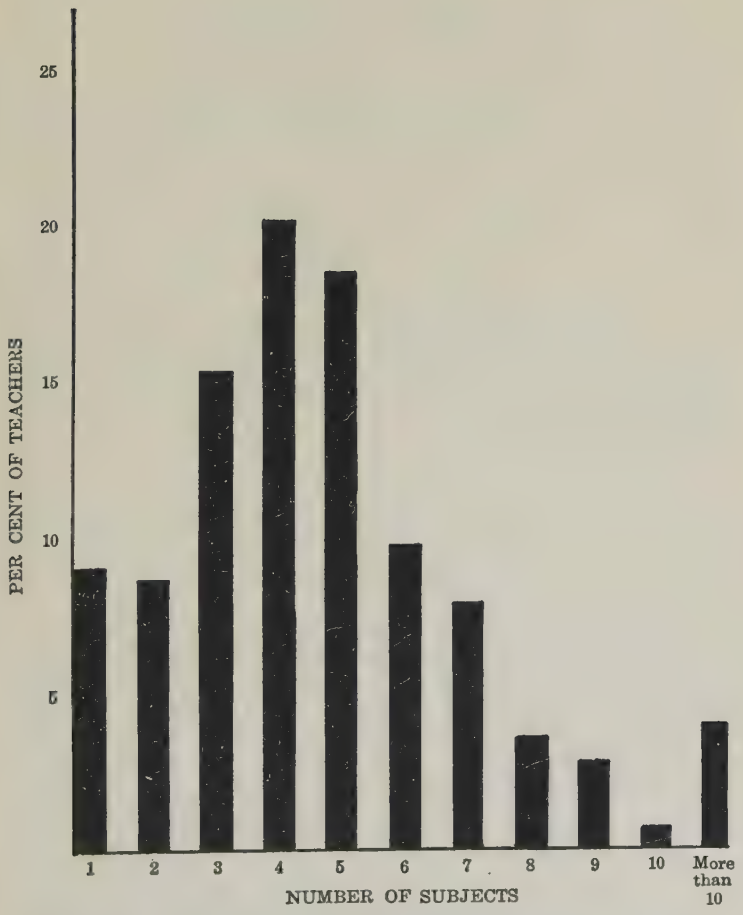


FIGURE 2. DISTRIBUTION OF TEACHERS ACCORDING TO THE NUMBER OF SUBJECTS THEY HAVE TAUGHT (California).

be made. The following tables and figure present the evidence, dividing the teachers into four groups according to the size of the school staff, as in some previous tables.

Explanation is perhaps due first of all for the percentage of teachers shown in Table VII*a* who teach from one to four classes a day, and in Table VII*b* for those who are teaching from one to three classes a day. It will be noticed that these percentages are small. As may be surmised, some represent teachers who devote only part of their time to high school work, and others represent the part-time teaching schedules of high school principals. The great majority of the principals of these high schools teach part of the day, and the teaching principals have been considered the same as teachers throughout the project.

TABLE VII*a*

PERCENTAGE DISTRIBUTION OF TEACHERS ACCORDING TO THE NUMBER OF CLASSES PER DAY ON THEIR PROGRAMS
(PENNSYLVANIA)

Number of classes per day	Teachers in 3- and 4-tchr. schools (86)	Teachers in 5- and 6-tchr. schools (74)	Teachers in 7- and 8-tchr. schools (84)	Teachers in 9- and 10-tchr. schools (73)	Total (317)
1	1.2		3.6	4.1	2.2
2	1.2	1.4	7.1	1.4	2.8
3	3.5	5.4	3.6	5.5	4.4
4	1.2	6.8	8.3	13.7	7.3
5	24.4	28.4	39.3	27.4	30.0
6	48.8	40.5	29.8	39.7	39.7
7	17.4	17.6	8.3	5.5	12.3
8	2.3			2.7	1.3
Total	100.0	100.1	100.0	100.0	100.0
Median number of classes	5.88	5.70	5.20	5.42	5.58

TABLE VII*b*

PERCENTAGE DISTRIBUTION OF TEACHERS ACCORDING TO THE NUMBER OF CLASSES PER DAY ON THEIR PROGRAMS
(CALIFORNIA)

Number of classes per day	Teachers in 3- and 4-tchr. schools (41)	Teachers in 5- and 6-tchr. schools (68)	Teachers in 7- and 8-tchr. schools (105)	Teachers in 9- and 10-tchr. schools (98)	Total (312)
1			1.9	5.1	2.2
2		1.5	3.8	3.1	2.6
3		11.8	9.5	7.1	8.0
4	31.7	16.2	30.4	24.5	25.6
5	24.4	30.9	30.4	28.6	29.1
6	26.8	33.8	20.9	21.4	24.6
7	17.1	5.9	2.9	8.2	7.0
8				2.0	.6
Total	100.0	100.1	99.8	100.0	99.7
Median number of classes	5.25	5.16	4.64	4.85	4.90

In the study of Table VII*a*, the reader is requested to glance first at the percentage distribution of the 86 Pennsylvania teachers in 3- and 4-teacher high schools. There is a decided mode at six classes per day, 48.8 per cent teaching that number. The mode is the same for the 5- and 6-teacher schools, though not so marked; it shifts to five classes per day for the 7- and 8-teacher schools, but moves back to six in the 9- and 10-teacher schools. In each of the two groups of smaller schools at the left, over 17 per cent of the teachers are teaching seven classes a day; the percentage drops sharply for the two groups of larger schools. The California teachers (Table VII*b*) evidently do not teach as many classes a day as those of Pennsylvania; but there is also evidence that, as in Pennsylvania, the teachers in the smaller high schools have to teach more classes than those in the larger. A measure

of the latter tendency is given in the medians at the foot of each table. These medians are figured on the assumption that the number of classes in any particular case is the mid-point of the step; *e.g.*, 4 means the step 3.50–4.49. An unaccountable feature is the fact that in both states the median is higher for 9- and 10-teacher schools than for 7- and 8-teacher schools.

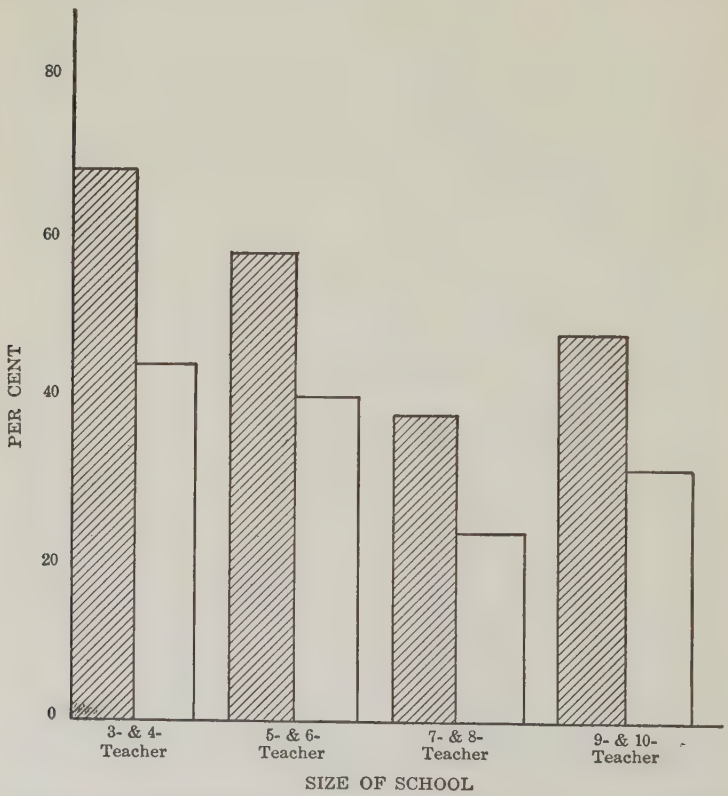


FIGURE 3. PERCENTAGES OF TEACHERS TEACHING MORE THAN FIVE CLASSES A DAY (Shaded, Pennsylvania; in outline, California).

Figure 3 is derived from Tables VII*a* and VII*b*. It portrays the percentages of teachers in the four groups of schools, in both states, who teach more than five classes a day, showing how much more likely are the teachers of the smaller schools to have a schedule of six or more classes a day than the teachers of the larger schools.

Tables VIII*a* and VIII*b* show the situation in the four groups of schools with regard to the number of daily preparations that must be made. At the foot of each table are the median numbers of preparations, the medians being computed in the same manner as those in the tables just explained. Considering the medians as a reliable single measurement of the differences between the groups of schools and between the two states, they are plotted in Figure 4. This figure shows that while the number of preparations required of Pennsylvania teachers in 3- and 4-teacher schools is greater than in similar California schools, the teachers of the former state enjoy the advantage in all the other groups of schools, notwith-

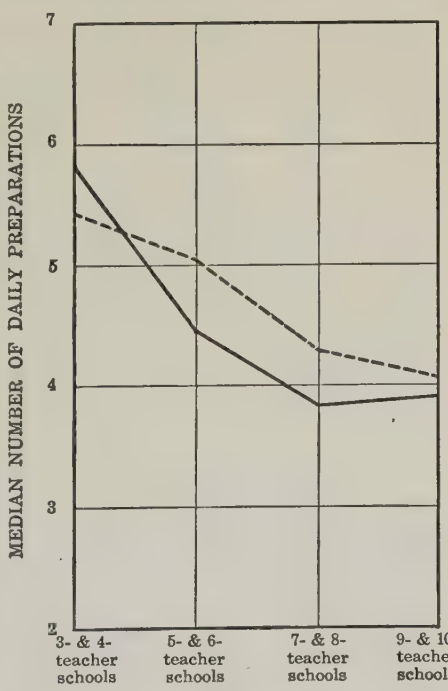


FIGURE 4. MEDIAN NUMBER OF DAILY PREPARATIONS THE TEACHERS MUST MAKE (Solid line, Pennsylvania; broken line, California).

TABLE VIII*a*

PERCENTAGE DISTRIBUTIONS OF TEACHERS ACCORDING TO THE NUMBER OF DAILY PREPARATIONS THEY MUST MAKE
(PENNSYLVANIA)

Number of preparations	3- and 4-tchr. schools (86)	5- and 6-tchr. schools (74)	7- and 8-tchr. schools (85)	9- and 10-tchr. schools (71)	All schools (316)
1	1.2		5.9	1.4	2.2
2	1.2	2.7	5.9	4.2	3.5
3	3.5	12.2	24.7	32.4	17.7
4	3.5	35.1	38.8	29.6	26.3
5	26.7	32.4	17.6	22.5	24.7
6	45.3	8.1	5.9	5.6	17.1
7	16.3	9.5	1.2	4.2	7.9
8	2.3				.6
Total	100.0	100.0	100.0	99.9	100.0
Median number of preparations . . .	5.81	4.50	3.85	3.91	4.51

standing the fact that they have more classes to teach, as already shown in Tables VII*a* and VII*b*. The reason for this change is hinted at in Table IV which shows how many more pupils per teacher there are in the Pennsylvania schools than in those of California. The 5- and 6-teacher schools of the former have a sufficient enrollment to require some sectioning of classes, and this has a tendency to cut down the number of preparations per teacher. More significant, however, than the comparison of states is the comparison between the different groups of schools. Teachers in schools having faculties of from 7 to 10 enjoy a very considerable advantage over teachers in schools having faculties of from 3 to 6, as the downward dips of both curves indicate. And this advantage is

TABLE VIII*b*

PERCENTAGE DISTRIBUTIONS OF TEACHERS ACCORDING TO THE NUMBER OF DAILY PREPARATIONS THEY MUST MAKE
(CALIFORNIA)

Number of preparations	3- and 4-tchr. schools (29)	5- and 6-tchr. schools (57)	7- and 8-tchr. schools (105)	9- and 10-tchr. schools (90)	All schools (281)
1			1.9	5.6	2.5
2		3.5	3.8	10.0	5.3
3	3.5	10.5	15.2	14.4	12.8
4	24.2	14.0	37.1	27.8	28.1
5	24.2	36.8	32.4	30.0	31.7
6	41.4	26.3	8.6	8.9	15.7
7	3.5	8.8	1.0	1.1	2.8
8	3.5			2.2	1.1
Total	100.3	99.9	100.0	100.0	100.0
Median number of preparations . . .	5.43	5.10	4.29	4.22	4.54

the pupil's gain. Presumably the teacher will give greater thought to three preparations than he possibly could give to six. Let us, then, in this respect, create the conditions which give scholarship the chance to flower.

D. NUMBER AND CHARACTER OF THE SUBJECT-COMBINATIONS BEING TAUGHT

Since teachers must so frequently teach several subjects, the following questions should receive consideration in a discussion of the teacher's program. To what degrees are each of the various subjects likely to appear singly and in combination with other subjects? Can certain combinations be depended upon as appearing frequently, so that teachers can be

TABLE IX*a*

PERCENTAGE DISTRIBUTIONS OF THE VARIOUS SUBJECTS TO SHOW THE EXTENT TO WHICH THEY APPEAR SINGLY AND IN COMBINATION IN SCHOOLS OF THE SIZE INDICATED (PENNSYLVANIA)

SUBJECT AND SIZE OF SCHOOL	NO. OF TCHRS.	PERCENTAGE OF TIMES EACH SUBJECT APPEARS					
		As a single subject	In a 2-subj. comb.	In a 3-subj. comb.	In a 4-subj. comb.	In a 5-subj. comb.	In a 6-subj. comb.
English							
3- and 4-teacher	36	5.6	30.6	33.4	22.2	5.6	2.8
5- and 6-teacher	24	16.7	50.0	16.7	12.5		4.2
7- and 8-teacher	24	33.3	25.0	25.0	12.5	4.2	
9- and 10-teacher	19	15.8	42.1	36.8	5.3		
All	103	16.5	35.9	28.1	14.6	2.9	1.9
Mathematics							
3- and 4-teacher	39	2.6	10.2	12.8	46.1	23.0	5.1
5- and 6-teacher	18	22.2	50.0	11.1	11.1	5.6	
7- and 8-teacher	24	37.5	33.3	12.5	8.3	8.3	
9- and 10-teacher	13	30.8	30.8	30.8	7.7		
All	94	19.2	26.6	14.9	24.5	12.8	2.1
Latin							
3- and 4-teacher	27		33.3	33.3	25.9	7.4	
5- and 6-teacher	15	13.3	46.7	13.3	26.7		
7- and 8-teacher	18	16.7	44.4	22.2	16.7		
9- and 10-teacher	12	8.3	58.3	25.0	8.3		
All	72	8.3	43.1	16.7	20.9	2.8	
French							
3- and 4-teacher	14		7.1	50.0	28.6	14.3	
5- and 6-teacher	13		61.6	23.1	15.4		
7- and 8-teacher	12	8.3	25.0	50.0	8.3	8.3	
9- and 10-teacher	11		54.6	18.2	27.3		
All	50	2.0	36.0	36.0	20.0	6.0	
History							
3- and 4-teacher	37		2.7	27.0	45.9	18.9	5.4
5- and 6-teacher	20		35.0	30.0	25.0	5.0	5.0
7- and 8-teacher	19	5.3	47.3	26.3	5.3	15.8	
9- and 10-teacher	21		42.8	47.6	9.5		
All	97	1.0	26.8	31.9	25.8	11.3	3.1
Social Science							
3- and 4-teacher	31		3.2	22.6	48.4	19.4	6.5
5- and 6-teacher	20		30.0	30.0	25.0	10.0	5.0
7- and 8-teacher	18		44.4	22.2	16.7	16.7	
9- and 10-teacher	16		43.8	43.8	12.5		
All	85		25.9	28.2	29.4	12.9	3.5

TABLE IX*a* — *Continued*

Subject and Size of School	No. of Tchrs.	Percentage of Times Each Subject Appears					
		As a single subject	In a 2-subj. comb.	In a 3-subj. comb.	In a 4-subj. comb.	In a 5-subj. comb.	In a 6-subj. comb.
Chemistry							
3- and 4-teacher	11		9.1		36.4	45.5	9.1
5- and 6-teacher	10		10.0	10.0	50.0	20.0	10.0
7- and 8-teacher	8		25.0	25.0	25.0	25.0	
9- and 10-teacher	8			62.5	37.5		
All	37		10.8	21.6	37.8	24.3	5.4
Physics							
3- and 4-teacher	20			5.0	50.0	40.0	5.0
5- and 6-teacher	10		10.0	30.0	30.0	30.0	
7- and 8-teacher	11		18.2	18.2	36.4	27.3	
9- and 10-teacher	8		25.0	37.5	37.5		
All	49		10.2	18.4	40.8	28.6	2.0
Biology							
3- and 4-teacher	20			10.0	40.0	35.0	15.0
5- and 6-teacher	13			46.1	38.5	7.7	7.7
7- and 8-teacher	10			40.0	40.0	20.0	
9- and 10-teacher	7			57.1	42.9		
All	50			32.0	40.0	20.0	8.0
General Science							
3- and 4-teacher	25			4.0	48.0	40.0	8.0
5- and 6-teacher	14			35.7	35.7	21.4	7.1
7- and 8-teacher	11		9.1	36.4	45.5	9.1	
9- and 10-teacher	12		25.0	41.7	33.3		
All	62		6.5	24.2	41.9	22.6	4.8
Natural Science							
3- and 4-teacher	37		16.2	40.5	35.1	8.1	
5- and 6-teacher	16	37.5	31.3	18.8	12.5		
7- and 8-teacher	18	27.8	44.4	16.7	5.6	5.6	
9- and 10-teacher	18	33.3	33.3	27.8	5.6		
All	89	19.1	28.1	29.2	19.1	4.5	
Agriculture							
All	17	29.4	23.5	5.9	17.6	17.6	5.9
Home Economics							
All	17	70.6	17.6	5.9	5.9		
Commercial Subjects							
3- and 4-teacher	14			28.6	35.7	7.1	28.6
5- and 6-teacher	11	27.3	36.4	9.1	27.3		
7- and 8-teacher	11	45.5	27.3	18.2	9.1		
9- and 10-teacher	7	71.4	14.3	14.3			
All	43	30.2	18.6	18.6	20.9	2.3	9.3
Physical Education							
All	18		5.6	22.2	44.4	22.2	5.6

definitely prepared for them? What is usually the relation between the subjects of a teacher's program? Is it such that the teacher's preparation in one of his subjects will help him to teach the others? With such questions in mind the writer derived the tables of this section of the chapter from the data furnished by teachers and principals on the blanks reproduced in Appendices A and B.

Tables IX*a* and IX*b* present percentage distributions of the appearances of each of the subjects. An illustrative reading of the first line of Table IX*a* is as follows: In the 3- and 4-teacher schools of Pennsylvania, 36 teachers of English reported their programs; of this group, 5.6 per cent were teaching English only, 30.6 per cent were teaching it with one other subject (a two-subject combination), 33.4 per cent were teaching it with two other subjects (a three-subject combination), etc. For most of the subjects in both Pennsylvania and California, the distributions are given for the four groups of schools separately in order to give opportunity for comparison. But in cases where the number of appearances was small, all the schools were grouped together. A few subjects, found but seldom in the teachers' programs, were not entered in the tables at all. In any event, the listing of the number of teachers in the second column assures the reader the opportunity of determining for himself whether or not there are sufficient cases to afford a representation on which to base a percentage distribution.

A little study of the column of single-subject frequencies in the two tables causes us to note that English, mathematics, Latin, agriculture, home economics, industrial arts, music, and commercial subjects are the only subjects that appear with any frequency to stand alone in teachers' programs. And for most of these, the percentage of such appearances is very

TABLE IXb

PERCENTAGE DISTRIBUTIONS OF THE VARIOUS SUBJECTS TO SHOW THE EXTENT TO WHICH THEY APPEAR SINGLY AND IN COMBINATION IN SCHOOLS OF THE SIZE INDICATED (CALIFORNIA)

SUBJECT AND SIZE OF SCHOOL	NO. OF TCHRS.	PERCENTAGE OF TIMES EACH SUBJECT APPEARS					
		As a single subject	In a 2-subj. comb.	In a 3-subj. comb.	In a 4-subj. comb.	In a 5-subj. comb.	In a 6-subj. comb.
English							
3- and 4-teacher	12		25.0	33.3		33.3	8.3
5- and 6-teacher	20		20.0	45.0	35.0		
7- and 8-teacher	23	13.0	43.5	39.1	4.3		
9- and 10-teacher	19	21.0	42.1	31.6	5.3		
All	74	9.5	33.8	37.8	12.2	5.4	1.4
Mathematics							
3- and 4-teacher	9		22.2	33.3	33.3	11.1	
5- and 6-teacher	17	5.9	5.9	41.2	35.3	11.8	
7- and 8-teacher	25	12.0	20.0	28.0	28.0	12.0	
9- and 10-teacher	17	11.8	17.6	29.4	35.3	5.9	
All	68	8.8	16.2	32.3	32.3	10.3	
Latin							
3- and 4-teacher	3		33.3		33.3	33.3	
5- and 6-teacher	7		14.3	42.9	28.6	14.3	
7- and 8-teacher	9		33.3	33.3	22.2	11.1	
9- and 10-teacher	12	8.3	16.7	58.3	8.3	8.3	
All	31	3.2	22.6	41.9	19.4	12.9	
Spanish							
3- and 4-teacher	8		37.5	12.5		37.5	12.5
5- and 6-teacher	9		22.2	33.3	33.3	11.1	
7- and 8-teacher	15		33.3	33.3	26.7	6.7	
9- and 10-teacher	10	10.0	30.0	50.0		10.0	
All	42	2.4	30.9	33.3	16.7	14.3	2.4
History							
3- and 4-teacher	10			20.0	40.0	20.0	20.0
5- and 6-teacher	18		5.6	33.3	44.4	16.7	
7- and 8-teacher	22		22.7	27.3	40.9	9.1	
9- and 10-teacher	15		33.3	40.0	13.3	13.3	
All	65		16.9	30.8	35.4	13.9	3.1
All Social Science courses, unified and separate							
3- and 4-teacher	7				28.6	28.6	42.8
5- and 6-teacher	17		5.9	35.3	47.0	11.8	
7- and 8-teacher	20	5.0		10.0	50.0	35.0	
9- and 10-teacher	15		33.3	33.3	13.3	20.0	
All	59	1.7	10.2	22.0	37.3	23.7	5.1
Chemistry							
3- and 4-teacher	7			42.8	42.8	14.3	
5- and 6-teacher	9		11.1	33.3	44.4	11.1	
7- and 8-teacher	11		9.1	45.5	27.3	18.2	
9- and 10-teacher	11		9.1	36.4	45.5	9.1	
All	38		7.9	39.5	39.5	13.2	

TABLE IX*b* — *Continued*

Subject and Size of School	No. of Tchrs.	Percentage of Times Each Subject Appears					
		As a single subject	In a 2-subj. comb.	In a 3-subj. comb.	In a 4-subj. comb.	In a 5-subj. comb.	In a 6-subj. comb.
Physics							
All	16	6.3	12.5	31.3	37.5	6.3	6.3
Biology							
All	20		10.0	45.0	30.0	15.0	
General Science							
3- and 4-teacher	7			28.6	42.8	14.3	14.3
5- and 6-teacher	9		11.1	33.3	33.3	22.2	
7- and 8-teacher	11		9.1	54.5	27.3	9.1	
9- and 10-teacher	6			50.0	33.3	16.7	
All	33		6.1	42.4	33.3	15.2	3.0
Natural Science							
3- and 4-teacher	9		11.1	22.2	22.2	33.3	11.1
5- and 6-teacher	12	8.3	16.7	50.0	16.7	8.3	
7- and 8-teacher	16	12.5	31.3	31.3	18.8	6.3	
9- and 10-teacher	14	14.3	42.8	28.6	14.3		
All	51	9.8	27.4	33.3	17.6	9.8	2.0
Agriculture							
All	22	13.6	36.4	27.3	13.6	9.1	
Home Economics							
3- and 4-teacher	4	25.0		25.0	25.0	25.0	
5- and 6-teacher	12	16.7	25.0	16.7	33.3	8.3	
7- and 8-teacher	14	35.7	42.8	21.4			
9- and 10-teacher	11	45.5	36.4	9.1	9.1		
All	41	31.7	31.7	17.1	14.6	4.9	
Industrial Arts							
3- and 4-teacher	7			42.8	28.6	14.3	14.3
5- and 6-teacher	9	11.1	22.2		33.3	33.3	
7- and 8-teacher	15	33.3	20.0	26.7	6.7	13.3	
9- and 10-teacher	13	30.8	38.5	23.1	7.7		
All	44	22.7	22.7	22.7	15.9	13.6	2.3
Music							
3- and 4-teacher	2					100.0	
5- and 6-teacher	10		30.0	30.0	30.0	10.0	
7- and 8-teacher	9	22.2	33.3	11.1		33.3	
9- and 10-teacher	9	44.4	33.3	11.1	11.1		
All	30	20.0	30.0	16.7	13.3	20.0	
Graphic Arts							
All	23		26.1	34.8	30.4	8.7	
Commercial Subjects							
3- and 4-teacher	9		33.3	33.3	11.1	22.2	
5- and 6-teacher	20	10.0	25.0	25.0	35.0	5.0	
7- and 8-teacher	17	52.9	17.6	23.5		5.9	
9- and 10-teacher	13	69.3	7.7	15.4	7.7		
All	59	33.9	20.3	23.7	15.3	6.8	
Physical Education							
3- and 4-teacher	12			33.3	25.0	25.0	16.7
5- and 6-teacher	21		9.5	23.8	42.8	23.8	
7- and 8-teacher	40		37.5	25.0	27.5	10.0	
9- and 10-teacher	34		44.1	23.5	23.5	8.8	
All	107		29.9	25.2	29.0	14.0	1.9

light. Examination of the column of two-subject combinations reveals heavier percentages of appearance for all subjects, but still there are some subjects, notably the several sciences, which appear quite infrequently even in this column. In the Pennsylvania schools, of the fifty teachers of biology, not one is privileged to teach the subject singly or in a two-subject combination.

Attention is called to the distribution for natural science in both tables. Because the sciences are a related group of subjects, it seemed desirable to ascertain the results for this table when chemistry, physics, biology, and general science are counted simply as different branches of one subject — science — just as algebra, plane geometry, solid geometry, and trigonometry are considered as one subject — mathematics. It is apparent from the Pennsylvania table that in the three groups of largest schools, a considerable proportion — though not more than three eighths — of science teachers are to be found teaching that subject alone. But about the same percentages in the same-sized schools are teaching one subject in addition to science, and quite a number are teaching two additional subjects. The California schools show slightly more tendency to multiple combinations for the science teachers than do those of Pennsylvania.

But perhaps the point of greatest significance about Tables IX*a* and IX*b* is the contrast between the different sizes of schools. It is clear that in all sizes of schools some teachers of almost every subject are called upon to teach more additional subjects than they could well be prepared for; but we see here fresh evidence to support the fact already established that most of the teaching positions in the smallest schools here studied are impossible, incompatible with efficient teaching. To show more fully the contrast between 3- and 4-teacher

and 9- and 10-teacher schools, and to make more clear the real extent of complex subject-combinations, Figure 5, derived from Table IX*a*, is presented to show the percentages

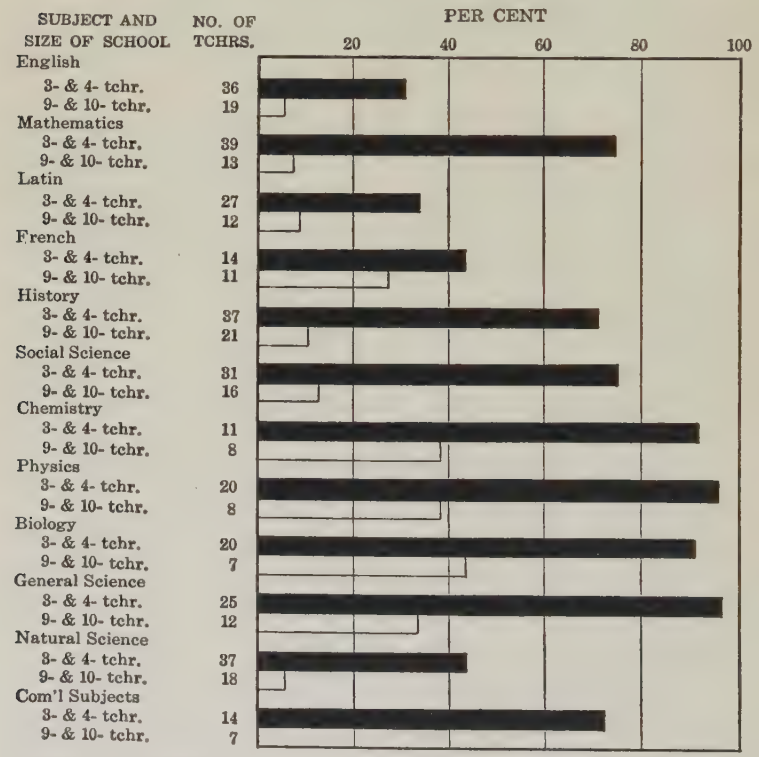


FIGURE 5. PERCENTAGES OF TEACHERS TEACHING FOUR OR MORE SUBJECTS (Pennsylvania).

of the Pennsylvania teachers who are teaching four or more subjects.

What should be the reaction of a representative of a teacher-training institution to this data? It should be clear to him,

for instance, that the person who would teach chemistry must be prepared to handle more additional subjects than the teacher of English or Latin. Even in the 9- and 10-teacher schools almost 40 per cent of the chemistry teachers teach three or more additional subjects. For even in the high school of 200 students there usually will be but one class in chemistry. In English, on the other hand, many classes are going forward. So Figure 5 and Tables IX*a* and IX*b* afford something of a glimpse of the high school teacher's job for every subject, just a little of the sort of data that should be studied by teacher-training institutions to determine their curricula in content training.

Some analysis to determine the nature of the subject-combinations is afforded by Tables X and XI. Such analysis, one might suppose, ought to give some helpful hints to the teacher-training institutions, but as a matter of fact it helps but little. Most of the recurring combinations recur too seldom to afford satisfactory grounds for generalizing. They serve to call to our minds once more the facts of Table VI, showing the large number of subjects the teachers have taught. If Tables X and XI showed but a few combinations and those recurring with great frequency, we should have a stability that would make it impossible for teachers to teach as many subjects in their careers as Table VI indicates. But as it is, the evidence points to instability and confusion.

Table XII summarizes for California, Pennsylvania, and Minnesota the numbers and percentages of teachers who are teaching recurring and non-recurring combinations. Footnotes are included to indicate the number of subjects involving teachers of single subjects and the number of combinations involving teachers of recurring combinations. As we have already seen from the tables immediately preceding, many of

TABLE X

Recurring Two-Subject Combinations

Combinations	Number of Times Each Occurs		
	Pennsylvania (331 teachers)	California (280 teachers)	Minnesota (345 teachers)
English–Mathematics	2		
English–Latin	11	4	11
English–French	8		5
English–German			2
English–Spanish	3	2	
English–History	4	2	6
English–Social Science	4		
English–Public Speaking		6	4
English–Commercial	2		2
English–Physical Education		2	
Mathematics–Latin	5		3
Mathematics–French	2		
Mathematics–History			2
Mathematics–Chemistry	2		2
Mathematics–Physics	4		4
Mathematics–General Science			2
Mathematics–Shop			3
Mathematics–Commercial	6	3	4
Mathematics–Physical Education		4	
Latin–French	7		2
Latin–Spanish	4	2	
Latin–History	3		2
Spanish–Commercial		3	
Spanish–Physical Education		3	
History–Social Science	15		
History–Political Science		2	2
History–Home Economics			2
Economics–Commercial			2
Chemistry–Home Economics			2
Physics–Shop			2
General Science–Home Economics	2		3
Physiology–Home Economics			3
Agriculture–Shop			3
Agriculture–Physical Education		4	
Shop–Graphic Arts		2	
Shop–Physical Education		6	
Home Economics–Music		2	
Home Economics–Physical Education		7	
Music–Graphic Arts		2	
Total	84	56	73

TABLE XI

RECURRING THREE-SUBJECT COMBINATIONS

COMBINATIONS	NUMBER OF TIMES EACH OCCURS	
	Pennsylvania (331 teachers)	California (280 teachers)
English–Latin–French	7	
English–Latin–Commercial	2	
English–Spanish–Physical Education		2
English–Commercial–Physical Education		2
English–History–Social Science	12	
Mathematics–Latin–French	3	
Mathematics–History–Social Science	4	
Mathematics–Chemistry–General Science		2
Mathematics–Chemistry–Physical Education		2
Latin–Spanish–Physical Education		2
History–Social Science–Biology	2	
Chemistry–Biology–General Science	4	
Chemistry–Physics–Biology	2	
Physics–Biology–General Science	4	
Agriculture–Shop–Physical Education		3
Total	40	13

the recurring combinations appear only twice, just often enough to be called " recurring." This is true of practically all of the four-subject combinations, there being one notable exception, that of chemistry–physics–biology–general science, which appeared eight times in the Pennsylvania schools.

The reader will note the large number of non-recurring three- and four-subject combinations in California, as compared with the other states. This is due to the wider curricular offering of the former state and in part, no doubt, to a marked tendency to scatter a heavy program of physical education so as to give almost every member of the staff a class in the subject, as will appear from a following table. Such a policy

TABLE XII

NUMBERS AND PERCENTAGES OF TEACHERS WHO TEACH SINGLE SUBJECTS AND COMBINATIONS OF SUBJECTS

TYPE OF SCHEDULE	CALIFORNIA		PENNSYLVANIA		MINNESOTA	
	No. of teachers	Per cent	No. of teachers	Per cent	No. of teachers	Per cent
Single subject . . .	63[1]	22.5	82[2]	24.8	105[3]	30.3
Recurring two-subject combinations . .	56[4]	20.0	84[5]	25.4	73[6]	21.2
Non-recurring two-subject combinations .	24	8.6	15	4.5	24	6.9
Recurring three-subject combinations . . .	13[7]	4.6	40[8]	12.1	33	9.6
Non-recurring three-subject combinations	59	21.1	27	8.2	48	13.9
Recurring four-subject combinations . . .	2[9]	.7	22[10]	6.6	16	4.6
Non-recurring four-subject combinations	43	15.4	35	10.6	33	9.6
Five-subject combinations (none recurring)	18	6.4	21	6.3	10	2.9
Six-subject combinations (none recurring)	2	.7	5	1.5	3	.9
Totals	280	100.0	331	100.0	345	99.9

[1] 6 subjects involved.
[2] 9 subjects involved.
[3] 10 subjects involved.
[4] 17 combinations involved.
[5] 17 combinations involved.
[6] 23 combinations involved.
[7] 6 combinations involved.
[8] 9 combinations involved.
[9] 1 combination involved.
[10] 8 combinations involved.

for the administration of physical education can hardly be reconciled with our extended development of the subject and erection of special two- and four-year curricula for the training of teachers to handle it.

Table XII reveals the following numbers and percentages of teachers who teach combinations appearing only once:

California, 146, 52.2 per cent; Pennsylvania, 103, 31.1 per cent; Minnesota, 118, 34.2 per cent. The Minnesota study [1] revealed 14.5 per cent of the teachers in large high schools and 19.7 per cent of the teachers in high schools with faculties of 11 to 29 inclusive, who taught combinations appearing only once. Can teachers be given special training for such positions? Obviously not.

In order to present a more complete analysis of the tendencies in subject-combination, tabulations were made showing for Pennsylvania and California the relative frequency with which the various subjects appear in combination with each other. The procedure was simply to count the frequencies of all the subjects appearing in combination with English, for example, then make a percentage distribution of them. This was done for each subject. It is not essential to reproduce here the extended tables resulting, but only to give an excerpt as an illustration of the method and to mention the more significant findings. Table XIII shows the percentage distributions of subjects combined with four subjects. The numbers in parentheses at the head of each column represent the numbers of cases on which the distributions are based. To illustrate the reading of the table: Of the 162 frequencies with which subjects are combined with English, 6.8 per cent are mathematics, 17.3 per cent are Latin, 12.3 per cent are French, and so on down the column.

In Pennsylvania some tendencies in subject-combinations are noticeable. From the tabular excerpt given it is evident that the subjects appearing most frequently with English are Latin, French, history, and social science (community civics and problems of democracy). These four constitute 65.3 per cent of the subjects combined with English. It is

[1] *Op. cit.*, 24.

difficult to see any notable combination tendency for mathematics. This same lack of tendency was found by the writer in his study of Minnesota, even involving large high schools. The popular impression that mathematics is combined most frequently with the natural sciences seems to have no foundation in fact. Of the subjects combined with Latin, 71.6 per cent are English, mathematics, French, and history; of the subjects combined with French, 61.4 per cent are English, Latin, history.

TABLE XIII

PERCENTAGE REPRESENTATION OF RELATIVE FREQUENCY WITH WHICH THE VARIOUS SUBJECTS APPEAR IN COMBINATION WITH EACH OTHER (PENNSYLVANIA)

SUBJECTS	ENGLISH (162)	MATHEMATICS (180)	LATIN (120)	FRENCH (96)
English		6.1	23.3	20.8
Mathematics	6.8		13.3	9.4
Latin	17.3	8.9		26.0
French	12.3	5.0	20.8	
History	19.7	12.2	14.2	14.6
Social science	16.0	11.7	7.5	6.2
Chemistry	.6	6.1	.8	3.1
Physics	1.9	13.3		2.1
Biology	2.5	6.1	2.5	3.1
General science	4.3	10.5	3.3	2.1
Commercial subjects	6.2	8.9	3.3	
Miscellaneous	12.4	11.1	10.8	12.5
	100.0	99.9	99.8	99.9

History and social science showed more marked combination tendencies than any of those shown in Table XIII, about 30 per cent of the subjects combined with each being classes in the other. In the case of the four natural sciences, it was found that from 52.7 per cent to 61.8 per cent of the subjects

combined with each are other members of the same group. The subjects appearing most frequently with commercial subjects are English, mathematics, history, and social science. The Pennsylvania situation may be summed up as representing some evidence of combination tendencies in languages and literature, in social studies, and in natural sciences. But they are not dominant.

The California tabulation corresponding to Table XIII revealed virtually no traces of any tendency toward consistency in subject-combination, except that every subject has physical education appearing with it frequently. As previously mentioned, classes in that branch are quite well scattered throughout the faculty of most schools. There is no question but that the breadth of the California curricular offering is one reason why the subject-combinations are more completely chaotic than those of Pennsylvania.

The particular data, of which Table XIII is an illustration, sustain and elaborate the impression gained from the preceding tables that the subject-combinations now found in the schools are so varying as to make it impossible for teacher-training institutions to set up a real " training to specification " program. The job analysis shows the job to be exceedingly elusive and hard to define.

The realization of a high degree of teacher scholarship is dependent, for one thing, upon the alleviation of such conditions. The instability of subject-combinations is to be expected in view of the large number of subjects which many teachers have taught, and both are inimical to excellent scholarship. Truly, a program for securing better trained teachers may well include an improvement of teaching positions. This is a responsibility which must be borne by those who administer the high schools.

E. Special Training in Higher Institutions which Teachers Have Had for Their Teaching Subjects

In theory we have for some time recognized that a general cultural training does not sufficiently prepare the high school teacher for a position. The curriculum has become so broad that one cannot prepare himself for all the branches. The most authoritative statement of what the training of the teacher should be, has been the Report of the Committee of Seventeen.[1] This authority stated in 1907 that one of the elements of a teacher's training should be "a detailed and specialized study of the subjects to be taught," a statement which has, however, lacked the practical influence of a standard because it did not make concrete stipulations. As will be shown in a later chapter, the movement to require specific training in the subjects to be taught has not progressed very far.

However, the two states included in this project of the investigation have been among the most advanced in promoting a close relationship between subjects taught and special training. In California there must be sent to city and county boards of education a recommendation for each prospective teacher from the school in which he has taken his graduate work (California requires one year of graduate work of teachers of academic subjects), countersigned by the secretary of the State Board of Education. "Each recommendation shall state on its face the major and minor subjects which the holder thereof has taken in the institution, or the kind of work the candidate is qualified to do."[2] There is evidently

[1] Halleck, Reuben P., Chairman. "Professional Preparation of High-School Teachers," *Proceedings of the National Education Association*, 1907, 523 ff.

[2] Regulations Governing Certification of Teachers, California State Board of Education, *Bulletin*, No. 10–A, 1919.

no mandate, but a strong recommendation, that the teacher should teach only the subjects mentioned. Pennsylvania's best certificate [1] granted to a person without teaching experience is a license to teach only those subjects in which he has completed not less than twelve semester-hours. One may secure a lesser certificate to teach certain specified subjects in a Pennsylvania high school, however, and the special training in the subjects is not defined. Having in mind such standards as have been mentioned, let us examine the special training of the teachers for the subjects they are teaching.

By referring to Appendix B the reader may observe that the teachers were requested to state the number of college semester-hours of credit they had earned, subject by subject, and also high school units in foreign language. Comparing this data with the subjects taught, the investigator was enabled to determine each teacher's training for the subjects he was then teaching. This information for the teachers of Pennsylvania and California is summarized by subjects in Table XIV, and the same data for the similar group of Minnesota teachers is introduced for comparison. For subjects in which there was a very small number of teachers, no figures are given, as it seemed the sampling was too small to be assuredly representative. At any rate the number of teachers is given in each instance, so that the reader may himself estimate the reliability of the data. In the middle of the table it will be noticed there is given a column to show the number of teachers without any special preparation in higher institutions for the subjects taught. After the distribution of the semester-hours of preparation of the teachers of each subject was made, the first quartile, median, and third quartile for each

[1] "The Certification of Teachers." Harrisburg: The Teacher Bureau, Department of Public Instruction, January, 1922.

array were figured, and they have been recorded in the three right-hand columns of the table. In the languages some account was taken of the high school units reported. Since higher institutions not only give credit for high school work in the languages but also commonly consider two high school units to be the equivalent of a year of college work, it was felt that the teacher with high school units should be credited with that training in order to equate him with the teacher who had started his training in the same language with the elementary college course. From an analysis of freshman and sophomore courses in more than one hundred standard colleges and universities, the writer had become acquainted with the fact that the modal practice in beginning language courses in college is to require four hours each semester. He therefore reasoned that a fair procedure for this study would be to consider each high school unit the equivalent of four semester-hours. On this basis the high school work in Latin, French, and Spanish was figured into Table XIV.

Our study of this table may first be devoted profitably to the "Number without Preparation in Higher Institutions." We notice several in mathematics, though not many as compared with the total number of teachers reporting. In history about an eighth or a ninth of the teachers in Minnesota and Pennsylvania are without special training in that field. In the separate social-science courses in Minnesota, the fraction without training is evidently about one third, and for the California teachers it is almost a third. The training for unified social-science courses was determined by adding together all the hours earned in political science, economics, and sociology. In California 2 out of 22 and in Pennsylvania 9 out of 87 have had no hours in any of those fields. Passing to the natural sciences, we note a sprinkling of teachers with

TABLE XIV

Semester-Hours of Preparation in Higher Institutions for Subjects Taught

Subjects	Number of teachers reporting	Number without preparation in higher institutions	Semester-hours of Preparation		
			First quartile	Median	Third quartile
English					
Minnesota . . .	99	1	19.2	25.2	34.5
California	52	1	18.6	24.8	42.0
Pennsylvania . .	100	1	16.0	24.0	27.0
Mathematics					
Minnesota . . .	86	6	6.9	13.5	23.5
California	49	3	10.3	14.8	33.8
Pennsylvania . .	88	6	8.9	12.7	18.9
Latin					
Minnesota . . .	50	0	21.7	32.0	38.5
California	21	0	19.3	32.0	50.9
Pennsylvania . .	69	0	20.6	28.2	34.1
French					
Minnesota . . .	25	1	14.3	22.0	26.8
Pennsylvania . .	48	0	14.0	24.0	32.2
Spanish					
California	30	0	18.7	28.0	46.0
History					
Minnesota . . .	88	10	7.5	18.0	28.0
California	44	2	12.3	16.3	30.5
Pennsylvania . .	95	12	6.1	12.3	21.3
Political Science					
Minnesota . . .	43	19	1.7	3.8	10.5
Economics					
Minnesota . . .	23	7	2.5	4.5	8.3
Sociology					
Minnesota . . .	19	6	1.6	5.0	10.2
Political Science Economics, Sociology					
California	29	8	2.7	10.2	14.4
Unified Social Science					
California	22	2	10.5	20.0	46.5
Pennsylvania . .	87	9	5.8	8.4	13.7

TABLE XIV (*Continued*)

Subjects	Number of teachers reporting	Number without preparation in higher institutions	Semester-hours of Preparation		
			First quartile	Median	Third quartile
Chemistry					
Minnesota	33	1	12.8	21.0	27.5
California	28	1	10.0	20.2	23.0
Pennsylvania	33	0	8.3	14.8	28.5
Physics					
Minnesota	36	3	5.5	8.1	9.0
California	12	1	4.5	9.0	20.0
Pennsylvania	47	8	3.6	8.3	12.4
Biology					
Minnesota	18	0	8.8	16.0	24.5
California	16	0	8.0	20.0	42.0
Pennsylvania	47	5	4.9	8.5	18.3
General Science					
Minnesota	43	0	22.5	40.5	51.0
California	24	0	33.5	51.0	75.0
Pennsylvania	59	3	20.8	34.3	55.3
Agriculture					
Minnesota	7	1	63.0	74.5	89.0
California	12	0	41.0	60.0	79.0
Pennsylvania	15	2	39.3	55.5	72.5
Home Economics					
Minnesota	46	2	31.5	40.8	52.6
California	28	1	20.0	30.0	40.5
Pennsylvania	14	1	32.0	47.0	56.5
Industrial Arts					
Minnesota	24	5	3.0	13.0	24.0
California	29	6	2.6	8.5	33.2
Music					
California	19	3	11.0	30.3	46.5
Graphic Arts					
California	16	1	8.7	18.0	48.0
Commercial Subjects					
Minnesota	47	29	1.2	2.4	20.3
California	37	13	1.4	15.0	31.3
Pennsylvania	41	22	1.4	2.8	37.5
Physical Education					
California	77	13	2.5	6.1	10.3

no training for their subjects, the Pennsylvania group having the poorest record. Attention should be given to the large number of teachers of commercial subjects who have no preparation in that field. For the most part these are teachers of commercial law, commercial geography, or commercial arithmetic, trained for teaching academic subjects, but given one or two of these commercial branches because the regular teacher of commercial subjects had a full program of technical courses. Teachers of the latter frequently mentioned on their blanks a certain number of months spent in business college. As few institutions of collegiate rank give training in commercial technical courses, the business college training was evaluated in the proportion of thirty semester-hours for nine months. The last item in the column should be noticed: about one sixth of California's 77 teachers of physical education have had no training in that field.

The quartiles and medians are to be read as follows, beginning with the first row of figures in the table: Of the 99 Minnesota English teachers, 25 per cent have had less than 19.2 semester-hours of training in English, 50 per cent have had less than 25.2 hours, 75 per cent have had less than 34.5 hours, and the remaining 25 per cent have had more than that number of hours; the middle 50 per cent have had between 19.2 and 34.5 hours.

We can well devote some study to this portion of the table, comparing the quartiles and medians with the Pennsylvania twelve-hour law and with the subject-certification law of Indiana,[1] which sets up higher and more definite certification standards than any other state. According to the Pennsyl-

[1] "Teacher Training and Licenses as Determined by the Teacher's License Law of 1923," and "Regulations of the State Board of Education," *Educational Bulletin*, No. 64. Indianapolis: State Superintendent of Public Instruction, 1923.

vania standard the teachers of English of all three states have more than met the minimum, except possibly a few below the first quartile. As the Indiana requirement is 24 hours, it can be seen that about half the teachers in each state have not attained the standard. In mathematics it may be judged that nearly half the teachers of all three states do not meet the Pennsylvania minimum. As the Indiana requirement in mathematics is 21 hours, it is evident that between 50 and 75 per cent could not teach in Indiana. The preparation of Latin teachers looms up favorably, but we must remember that a great many of those teachers have four high school units in Latin which are counted in this table as 16 hours. The Indiana requirement is 24 hours plus two high school units, equivalent to 32 hours in our table, which figure seems to be about the median preparation of the teachers under consideration. The Indiana minimum in French and Spanish is 24 hours each, which could not be met by large numbers of the teachers in our table. As to the social studies, the Pennsylvania law has been interpreted very liberally, candidates being certified to teach any subject in the field on presentation of 12 semester-hours in the entire field. The Indiana law requires 36 hours for certification in history and social science, 24 hours for certification in history alone, or 24 hours for certification in social science alone. On these standards very few of our teachers would qualify. It will be noticed that the Pennsylvania teachers of unified social science are especially weak in preparation; they will be brought under closer scrutiny in the chapter on the training of teachers in the social studies. If the 12-hour standard were applied to each of the natural sciences, it is apparent that considerable numbers of the teachers of those subjects would not measure up. But here again the Pennsylvania law has been interpreted very liberally, so that

a teacher may be certified to teach any of the natural sciences by presenting 12 hours in the entire science field. Indiana does not certify any one of the sciences separately, but sets up a requirement of 40 hours (properly distributed) for certification over the whole field, 25 hours for certification in physical science, or 25 hours for certification in biological science. It is probable that not many of these teachers could meet any of these standards. In the fields of agriculture, home economics, and industrial arts, Indiana requires 20 hours for certification for teaching in small high schools where the work is not regarded as vocational. Vocational teachers must secure special licenses requiring further preparation. Evidently the teachers of agriculture and home economics are on the whole well trained, but that cannot be said of the teachers of industrial arts. Indiana has a 20-hour requirement for music and art (approximately 10 hours of each) and the same for physical education, with which the reader can easily compare our teachers.

Table XIV is an inevitable corollary to the tables which portrayed the large numbers of subjects being taught and the confusion in subject-combinations. Many teaching positions are such that well-prepared teachers for all the subjects cannot be expected; examination of the teachers' training yields no surprise but confirms our expectations.

The reader may ask, What results would be shown if the training of the teachers were analyzed according to the size of school, in the same manner that the teaching programs were analyzed? As the teaching programs were shown to be more difficult in 3- and 4-teacher schools than in the 9- and 10-teacher schools, might we not also expect the poorer preparation in the 3- and 4-teacher schools? Such an analysis was made for Pennsylvania (California did not present enough

cases, except in a few subjects, to lend reliability), and the teachers of the two groups were found to be about equally prepared. It is not easy to account for this. Perhaps it means that little attention is paid in either group of schools to the matching up of special training and subjects taught. It should be stated at this point that in the Minnesota study the teachers in high schools having faculties of 11 to 29 were found to have more special training for their teaching subjects than the teachers in schools with faculties of 10 or fewer, and the schools with faculties of 30 or more were still more fortunate in that respect. But the close study of different-sized schools in the Pennsylvania group here investigated — none with more than 10 teachers — showed no notable differences.

A little study of Table XIV shows the California teachers to be slightly superior in training to those of Pennsylvania, a condition which may well be considered the result of the advanced training the former must present to be certificated. To make clear something of the distinction between the teachers of the two states, Table XV is offered. Probably all of the

TABLE XV

PERCENTAGES OF TEACHERS WHO HAVE COLLEGE DEGREES

SIZE OF SCHOOL	CALIFORNIA	PENNSYLVANIA
3- and 4-teacher	89.4	52.5
5- and 6-teacher	96.1	86.4
7- and 8-teacher	95.7	78.9
9- and 10-teacher	91.6	71.0

few California teachers without degrees are teaching special subjects — art, music, shop, etc. But probably the majority of the Pennsylvania teachers without degrees are teachers of academic subjects, if we may judge from the fact that rela-

tively few of the high schools offer an appreciable program in special subjects. While the California teachers, according to Table XIV, in general lead the Pennsylvania teachers in special training, yet it seems strange that their superiority is not more marked, considering that large numbers of them have taken a year of graduate work. Of the Minnesota teachers included in Table XIV, 88.2 per cent held bachelor's degrees. Except in the case of Pennsylvania, then, we may ignore any assumption that the impoverished training of many of the teachers for the subjects they teach is due to too short a period of training.

One additional point of interest in Table XIV is worth more elaborate treatment, and that is the training of the teachers of general science. As already indicated, many teachers do not have a sufficiently large total number of hours to have gained contact with all the sciences. But there is also no way of telling from Table XIV in how many of the sciences the teachers have had training; even those with 40

TABLE XVI

PERCENTAGE DISTRIBUTION OF TEACHERS OF GENERAL SCIENCE ACCORDING TO THE NUMBER OF SCIENCES IN WHICH THEY HAVE HAD SOME COLLEGIATE TRAINING

NUMBER OF SCIENCES	MINNESOTA	CALIFORNIA	PENNSYLVANIA
0	2.3		6.8
1	9.1	4.2	1.7
2	13.6	4.2	6.8
3	29.5	16.7	20.3
4	27.2	29.2	22.0
5	15.9	29.2	25.4
6	2.3	12.5	11.9
7		4.2	5.1
Total	99.9	100.2	100.0

TABLE XVII

PERCENTAGES OF TEACHERS OF GENERAL SCIENCE WHO HAVE HAD SOME COLLEGIATE TRAINING IN EACH OF THE NATURAL SCIENCES, WITH THE RANGE OF HOURS OF TRAINING SHOWN FOR EACH SCIENCE

THE SCIENCE	PENNSYLVANIA		CALIFORNIA	
	Per cent of G. S. teachers	Range of hours	Per cent of G. S. teachers	Range of hours
Chemistry	86.4	3–50	91.7	4–60
Physics	76.3	1–20	75.0	1–31
Botany	69.5	1–26	75.0	1–42
Zoölogy	66.1	1–22	54.2	1–34
Physiography and geology	45.8	1–12	50.0	1–33
Astronomy	15.3	1–4	33.3	2–6
Physiology	40.7	1–15	54.2	2–15

Of the Pennsylvania teachers of general science, 71.2 per cent had college credit in both chemistry and physics; of the California teachers, 70.8 per cent.

or more hours may have specialized highly in one or two fields. Tables XVI and XVII present some analysis of the training of the teachers of general science.

Specialists in general science teaching assert the need of all-round science training for the teacher of that subject. If the course is organized, as it is claimed it should be, in such a way as to take up the natural phenomena in which the pupil is interested, and explain them, the teacher needs some knowledge of all the sciences and their practical applications to the pupil's world. Table XVI makes it clear that over half the Minnesota teachers, more than one quarter of the California teachers, and more than one third of the Pennsylvania teachers have had no collegiate or normal school training in more than three of the seven sciences (those listed in Table XVII). The percentages of general science teachers in Pennsylvania

and California who have had training contact with each of the sciences are given in Table XVII, together with the ranges of hours represented. From the extremes shown by the latter we judge that some of the teachers have had inadequate contact and others have specialized so highly in a single science as to preclude the possibility of training in all the sciences.

The Indiana law requires the following distribution of credits for certification to teach natural science:

Botany	5
Zoölogy	5
Chemistry	10
Physics	10
Physical geography	5
Physiology	5
Total	40

From the data presented in Tables XIV, XVI, and XVII, it seems certain that the training of very few of the teachers of general science approximates any such standard. Yet it is evident that such training would not only reasonably fit a teacher of general science but would enable the teacher to handle the entire program of high school sciences, which constitute one of the most logical subject-combinations. The training for chemistry, physics, and biology would not be all that the specialists in each of those fields might desire, but it would be better than that exhibited by large percentages of the actual teachers of those subjects, as indicated by Table XIV.

F. Conclusions with Recommendations

The following are the principal conclusions to be drawn from the data set forth in this part of the investigation:

1. High schools of ten teachers and fewer exist in very large numbers throughout the country and include a large fraction, perhaps half, of the total number of high school teachers.

2. That the proportion of these small high schools to the total number of high schools may vary greatly with different states is evident from the fact that in California a much smaller proportion of the high schools are of the size here surveyed than in Pennsylvania or in the United States as a whole.

3. In California and Pennsylvania, as already shown for Minnesota and Washington, many teachers in these high schools are teaching more subjects than they could possibly be well prepared for.

4. Large percentages of the teachers have taught so many different subjects as to make it appear that their programs are assigned them almost without regard to their special training for the teaching of particular subjects.

5. The difficulty of the teacher's program, as indicated by the number of different subjects per teacher, the number of classes being taught, and the number of daily preparations necessary, varies inversely with the size of the faculty.

6. The broader the curriculum in these small high schools the greater is likely to be the variety of subjects assigned a teacher.

7. High school subjects vary considerably in the likelihood of their being taught as single subjects or in combination with one or more other subjects.

8. In the 3- and 4-teacher schools all subjects appear so frequently in combination with four or five other subjects as to make it difficult to see how they can be taught efficiently.

9. Analyses of the subject-combinations reveal practically no standardization but such a chaotic situation as to render too difficult the adequate preparation of teachers. There were observable slight tendencies in combinations which might serve as bases for standardization.

10. Measured by Pennsylvania and Indiana standards,

many of the teachers were found to have insufficient preparation for the subjects being taught.

11. California teachers presented a slightly better training for their teaching subjects than did those of Pennsylvania. This is accounted for no doubt by the longer period of training required of teachers in the former state.

12. Very few of the teachers of general science have a well-rounded training in all the sciences.

13. The conditions disclosed in California and Pennsylvania are in such substantial agreement with those previously revealed in Washington and Minnesota as to lead quite inevitably to the conclusion that they are nation-wide in extent.

14. The conditions named have been shown by the Minnesota and Washington studies to exist, but much less frequently, in high schools larger than those studied here.

A first remedial measure to which the evidence points is the reduction of the number of small high schools. This investigation has made it clear that the smaller the high school the more difficult must be the teacher's program and therefore the less efficient the teaching. That there is no need of so many small high schools over the country is evident from the contrast between California and Pennsylvania already made clear in Tables I and II. Consolidation has proceeded far in California, and, while reducing the number of small high schools, it cannot be said to have had the effect of denying secondary education to the youth of the state. For in California, in 1917–1918, there was a larger percentage of the population in high school than in any other state. The ratio was 27.0 high school students for every 1000 of population; in Pennsylvania the ratio was 14.4.[1] A policy of consolidation

[1] United States Bureau of Education *Bulletin*, 1920, No. 19, "Statistics of Public High Schools, 1917–1918," 49.

must be worked out with great care by each state according to its own peculiar problems. But a national organization such as the National Education Association and such accrediting associations as the North Central Association of Colleges and Secondary Schools should positively incite and support such activity. The promotion of scholarship among our teachers is dependent in the first instance upon the effecting of such simplification and standardization of teaching positions as will make possible the utilization of expertness. The teacher who must be a jack-of-all-trades is certainly a master of none.

A second remedial measure which suggests itself as one of great potency would be to set up the standards of preparation necessary for the teaching of each subject and then permit teachers to teach only those subjects in which they meet the standards. The certificating authority, which is the state department of education in most of our states, is the proper body to define and enforce such a policy. As already pointed out in the discussion accompanying Table XIV, Pennsylvania has made a beginning in this direction, and Indiana enacted, in 1923, an excellent law. In a later chapter this whole aspect of certification will be presented. Suffice it to say that the remedial measure we here propose is simply a shift, so far as the secondary school is concerned, from a policy of certificating for a *school* to a policy of certificating for *subjects*. Recognizing the breadth of the modern school curriculum, even in academic subjects alone, and the impossibility of engaging in a "detailed and specialized study" of each subject, we must certificate "teachers of English," or "teachers of social studies," and not high school teachers. For the promotion of this reform, also, there must be enlisted the active campaigning power of the national or-

ganizations that are interested in achieving higher professional standards.

A third obvious recommendation which the facts of this study urge upon us is that our teacher-training institutions must train each teacher not in *a subject* but rather in *subjects*. The evidence points to the advisability of training teachers for not fewer than three subjects, even assuming the elimination of many of the smallest high schools. It makes clear, also, the necessity for requiring the student who, for example, selects chemistry as his first teaching subject to prepare in more additional teaching subjects than if English were his first teaching subject. The significance for teacher-training institutions of the job analysis to which this chapter has been so largely devoted, will be taken up in greater detail in a later chapter.

The teacher's daily program has been subjected to exceedingly harsh criticism in this investigation because the data revealed an utter instability and lack of standardization of the subject-combinations. A fourth means, then, of improving the teaching situation would be to simplify and standardize subject-combinations. Progress in this direction seems to demand the coöperation of the school administrators who assign teachers their programs and the institutions that train the teachers. Without such coöperation, teachers may be trained for a combination and find no position, or the administrators may set up combinations and find no teachers to fit them. The effectiveness of such standardization is dependent, also, upon coördinated effort over the entire country, or at least large areas of it. This is because the teachers of any one state have been trained in many different institutions widely separated in location. The investigators of this problem in Washington found that the 496 teachers with which their

study dealt had received their training in 183 different higher institutions located in 28 different states.[1] In the writer's investigation of the training of 290 Minnesota teachers of social studies,[2] he found that they had been trained in 49 different institutions located in 14 states and Canada, 77 per cent, however, at institutions in Minnesota.

The standardization of combinations should no doubt find its primary basis in the relatedness of certain subjects. The natural sciences constitute a closely related group; training in each enlarges one's vision and gives command over the others. The social studies constitute another such group; training in any one of these fields is helpful to the understanding of the others. The lessons of history are clearer and more meaningful to the person who has studied the laws and principles of social science; the problems of community life and democracy cannot be rightly understood or taught unless one knows their historical background. Such relationship is not so pronounced between other high school subjects; it would be worth further study. But training in either of the groups mentioned would fit the teacher for carrying forward four units of the progressive high school's program. In the 3- and 4-teacher high schools, however, neither group would give the teacher a full program; he should therefore be prepared to handle at least one other subject or subject-group, just which one is difficult to say. Then in the high school which has two or three freshman sections, one teacher could not handle the entire group of subjects; one or two classes must be given to another teacher whose major training should be in some other field. What other field?

[1] Koos and Woody, *op. cit.*, 236.

[2] "High School Teachers of the Social Studies: Their Training and the Subjects They Teach." *Journal of Educational Research*, IX, 93–108, February, 1924.

The necessity for $1\frac{1}{6}$ or $1\frac{1}{3}$ or $1\frac{5}{6}$ teachers of English, science, social science, mathematics, or whatever the subject may be — fractional teachers — makes it evident that subject-combination will frequently have to go farther and be more involved than can readily be discerned, planned, and standardized. The trouble is that high schools are of all sizes and the prospective teacher cannot know to just what size he will be elected.

With a view toward making more specific recommendations in the matter of subject-combinations, the writer examined the daily schedules of the Pennsylvania high schools to see how the teachers' programs could be reorganized so as to make logical subject-combinations, secure as highly specialized a program as possible for each teacher, and eliminate the necessity for many teachers acting as jacks-of-all-trades. But he was forced to conclude that to assume in this way that the Pennsylvania curriculum is satisfactory as it stands would be building on an unsound foundation. The Pennsylvania high schools of less than ten teachers for most part offer too narrow and traditional a program. Such subjects as agriculture, home economics, industrial arts, music, art, and physical education very often are not found in the curriculum of these high schools. Yet some of these fields are coming more and more to be considered as core subjects and others as electives essential to the realization of a democratic system of secondary education. There were other obvious defects in the curricula, such as the requirement of two years of traditional secondary mathematics. In short, the writer was faced first of all with the problem of building a high school curriculum, then estimating the numbers of classes in the various subjects which would be going forward in high schools of different sizes — problems not to be touched in this investigation.

It is appropriate to mention at this point that an attempt has

been made to work out these very problems for four-year high schools of a certain-sized staff — three teachers — in Indiana, described in a reference [1] previously quoted. The plan called for one teacher trained in agriculture and science, one trained in home economics and English, and one trained in a foreign language, mathematics, and social studies. To standardize those positions, however, would assume that every year a certain number of prospective teachers would aim definitely in their training to prepare, for example, for teaching home economics and English in one of those three-teacher high schools. We could hardly expect that to happen.

A further illustration may make more clear some of the difficulties and dangers of standardizing subject-combinations. Table XI disclosed twelve teachers in Pennsylvania teaching a program of English–history–social science, by far the most frequently appearing three-subject combination. Should we say to ourselves, Here is a natural combination; let us require all who would major in English also to major in social studies, and vice versa? For many small high schools, this policy of training teachers would be wrong. In such schools English should constitute the major teaching field of one teacher and social studies the major teaching field of another. The program of each teacher should be filled out with an additional subject in which the teacher had minor preparation or possibly a second major preparation. In high schools of a little larger size it might well be that a third teacher could have an entire program devoted to such classes in English and social studies as could not be included in the program of the other two teachers.

In view of all the conditions described it seems that the standardization of subject-combinations is limited. But much

[1] Wetherow, E. B., *op. cit.*

can be accomplished if the essential unity of such fields as those of the social studies and the natural sciences will be recognized in the training of the teacher and the drawing up of his program of work. If the teacher is well trained in two broad fields — each being represented in the high school curriculum by from two to four units — and then required to minor in a lesser field or a branch of a larger field, as, biological science, or history, it seems his chances of securing a position appropriate to his training should be very high, especially if the high school administrator coöperates by grouping related subjects so far as possible. Such practices would bring to the pupils teachers of higher scholarship than that of those who are now ministering to them.

There remains to be suggested one more remedial measure, one which is closely related to the recommendation that small high schools be eliminated. That is the reorganization of small school systems on the six-six plan. This recommendation was made in both the Washington and Minnesota studies and it seems likely that it would work improvement in the conditions shown to exist in California and Pennsylvania as elsewhere over the country. If the three-teacher four-year high school were reorganized to include the seventh and eighth grades, there might very possibly be five teachers, dividing the work of grades 7–12 somewhat as follows: English, social studies, foreign language and mathematics, home economics and science, agriculture and science. The hypothetical illustration points to the possibility of having more of a vertical distribution of the teaching program. With the longer secondary period, the more possible it is to have each teacher's five or six classes come in a single department. In the writer's study of Minnesota it was developed that this advantage has been realized but little outside the subjects of home economics

and industrial arts. But there seems every reason to believe that the carrying out of such reorganization could make at least as much difference in the teachers' programs as exists between the 3- and 4-teacher and the 7- and 8-teacher high schools of California and Pennsylvania. Whatever devices secure specialization, give scholarship a chance to flourish.

This discussion of remedial measures has brought into sharp relief the responsibility of three groups — the teacher-training institutions, whose work is to formulate and administer the curricula that prepare the teachers; the teacher-certificating authorities, whose task is the establishment and enforcement of such standards as assure educational efficiency; and the high school principals and superintendents, who create the teachers' programs and select for the high school staff those candidates who can give the best service in the various positions. For the conditions revealed, these three groups must bear major responsibility; for the instituting of such changes as have been advocated, we must look primarily to them. Following the next two chapters, which analyze the training of teachers of social studies and English, our attention will be directed to the present practices and policies of these responsible persons.

CHAPTER III

THE SPECIALIZED PREPARATION OF TEACHERS OF THE SOCIAL STUDIES[1]

Nomenclature. — Throughout this chapter and the other chapters of this essay, college and high school courses in history, political science, economics, sociology, and the high school courses commonly termed community civics and problems of democracy, will be called collectively " social studies." Social studies other than history will be termed " social sciences." Courses in community civics and problems of democracy will be called " unified social science " ; high school courses in civics, economics, and sociology will be distinguished from other courses by being termed " separate social science courses."

The related character of these subjects. — No elaborate defense can be here undertaken in justification of the assumption of this chapter that the subjects named in the first paragraph are so related that the preparation for teaching them can be taken up in this unitary manner. Nor should any defense be necessary. Yet certain conditions exist which call for some comment of that nature. For example, practically every teacher-training institution which has a sufficiently large number of courses to do so maintains separate departments of history, political science, economics, and sociology. Institutions with small offerings tend to effect such combinations as history–political science and economics–sociology. Now, as we shall see in a later chapter, the prospective teacher is

[1] Dawson, Edgar. *Teaching the Social Studies*, The Macmillan Company.

frequently allowed to major in any one of the four social studies without reference to the others. In one of our large state universities there are even separate departments of American and European history, in either one of which the student expecting to teach may major. In the highly developed specialization which must be characteristic of the staff of any higher institution, if advanced teaching is done and research carried on, some of the essential unities of subject matter are forgotten; the small field so intensively tilled looms up more and more as a world unto itself.

But, as we have seen in Chapter II, the high school teacher, especially in his first years of experience, must not be a narrow specialist. He must be prepared to teach several subjects. To the urgent necessity of creating such teaching positions as will give him a program of related subjects, considerable attention was given in Chapter II.

Furthermore, the quality of the adolescent pupil's understanding has been recognized by recent psychology to be such that he is unable to grasp highly organized subject matter. A high degree of specialization is simply a high degree of abstractness for him. He requires a presentation of new experience in terms of that which he has, if he is actually to learn. In harmony with this view we have in recent years witnessed a rather widespread introduction in the eighth or ninth grade of the course known as community civics. The background which the teacher needs for the teaching of this course in community relations, community of interests, is gained from the study of economics, political science, and sociology. Training in these same departments is necessary for the teacher of the course which is rapidly gaining acceptance in the twelfth grade — problems of democracy. This course is so organized that the pupils will " study actual problems, or issues, or con-

ditions, as they occur in life, and in their several aspects, political, economic, and sociological." [1] Evidently the separate half-year courses in civics, economics, and sociology still taught in many high schools cannot be very far apart.

The purpose of history, we are told, is to give us greater intelligence concerning the human problems and institutions of to-day. Accordingly, the materials of history, formerly devoted too largely to military and political events, have been reconstructed to include important economic and social movements or changes.

All the subjects named as social studies deal with the problems and institutions of human society. The unity of the field is further attested to by the organization of all secondary school teachers of the field into a body known as the National Council for the Social Studies, the issuance of one journal — *The Historical Outlook* — to serve all of them, and the existence of but one committee of the Commission on the Reorganization of Secondary Education of the National Education Association to delineate the place and organization of social studies in the school curriculum. With this relatedness in mind, the facts of teacher-preparation will be examined. For the unified social science courses of the high school, training in the three social sciences is clearly needed; for the understanding and teaching of each social study, training in all the others is helpful.

Facts established by previous studies. — In order to bring clearly before us certain data already given in Chapter II or in other studies already referred to, Table XVIII has been prepared. It includes excerpts from Table XIV and is read

[1] Committee on Social Studies of the Commission on the Reorganization of Secondary Education of the National Education Association. "The Social Studies in Secondary Education." U. S. Bureau of Education *Bulletin*, 1916, No. 28, 53.

in the same way as that table. Data from the four states of Minnesota, Washington, Pennsylvania, and California are presented, showing the number of teachers reporting, the number without preparation in higher institutions, and the semester-hours of special preparation for each subject. For Minnesota and Washington the teachers are presented in three groups according to the size of the school, as explained in the footnote. For Pennsylvania and California there is available evidence only on teachers of Group III. At the time the facts were collected in Minnesota, social science appeared in the high school curriculum of that state primarily as half-year courses in civics, economics, and sociology. The training for each was figured on the basis of credits earned in the corresponding college or university department. History was the only social study on which the facts of training were given in the Washington investigation. The general inadequacy of the training of many of these teachers as compared with certain standards was sufficiently discussed in Chapter II.

But the measurement afforded by Table XVIII is so lacking in diagnostic quality as to leave many questions unanswered. For example, to what extent are the hours of teachers of history distributed so as to represent teachers trained for American, European, and ancient history? It is conceivable that a large total number of hours might mean only a high degree of specialization in one branch of history. Again, judging by the total number of hours, there appear to be some well-trained teachers of unified social science. To what extent are the hours distributed so as to give somewhat adequate contact with the three social sciences? To what degree are the teachers of social studies possessed of the well-rounded training which equips them to teach the entire social-studies program of the

TABLE XVIII

SEMESTER-HOURS OF PREPARATION IN HIGHER INSTITUTIONS FOR THE SUBJECTS TAUGHT

SUBJECTS	NO. OF TEACHERS REPORTING	NO. WITHOUT PREPARATION IN HIGHER INSTITUTIONS	SEMESTER-HOURS OF PREPARATION		
			First quartile	Median	Third quartile
MINNESOTA					
History					
[1] Group I	29	1	14.3	19.7	30.5
Group II	54	6	9.5	18.5	31.5
Group III	88	10	7.5	18.0	28.0
Political Science					
Group I	10	1	4.3	6.0	14.3
Group II	29	10	1.5	3.9	11.6
Group III	43	19	1.7	3.8	10.5
Economics					
Group I	9	2	2.3	5.0	14.5
Group II	18	3	5.5	10.0	15.5
Group III	23	7	2.5	4.5	8.3
Sociology					
Group I	5	0	4.6	6.5	9.5
Group II	11	1	3.3	4.3	6.4
Group III	19	6	1.6	5.0	10.2
WASHINGTON (From Koos and Woody)					
History					
Group I	27	1	16.2	24.3	41.6
Group II	15	2	7.2	12.5	28.1
Group III	44	7	6.3	9.8	21.7
PENNSYLVANIA					
Group III					
History	95	12	6.1	12.3	21.3
Social Science	87	9	5.8	8.4	13.7
CALIFORNIA					
Group III					
History	43	2	12.3	16.2	27.8
Political Science, Economics, Sociology	29	8	2.7	10.2	14.4
Unified Social Science	22	2	10.5	20.0	46.5

[1] Group I. Teachers in high schools with faculties of 30 or more.
Group II. Teachers in high schools with faculties of 11–29 inclusive.
Group III. Teachers in high schools with faculties of 10 or fewer.

high school, a related-subjects combination? An attempt will be made to answer these questions in this chapter.

The number of social sciences in which teachers of unified social science have had training. — As indicated in Table XVIII, we have some data on a number of teachers of unified social science in California and Pennsylvania. On the original blanks of inquiry, they recorded the numbers of semester-hours they had taken in each of the three fields of political science, economics, and sociology. To arrive at the distribution, of which the quartiles and medians are given in Table XVIII, all the hours in the three fields were added together

TABLE XIX

DISTRIBUTION OF PENNSYLVANIA AND CALIFORNIA TEACHERS OF UNIFIED SOCIAL SCIENCE ACCORDING TO THE NUMBER OF SOCIAL SCIENCES IN WHICH THEY HAVE HAD SOME TRAINING IN HIGHER INSTITUTIONS

NUMBER OF SOCIAL SCIENCES	PENNSYLVANIA		CALIFORNIA	
	Number	Per Cent	Number	Per Cent
0	9	10.3	2	9.1
1	30	34.5	5	22.7
2	24	27.6	5	22.7
3	24	27.6	10	45.5
Total	87	100.0	22	100.0

for each individual. The teacher who has taken eighteen hours evenly distributed among the three social sciences stands at the same point in the distribution as the one whose eighteen hours represent specialization in one field only. There is no distinction. Assuming that it is quite as important to consider the number of fields with which training contact has been made as to count the total number of credits earned, Table

XIX has been prepared. A little study of this table shows that almost half of the Pennsylvania teachers of unified social science have received training in but one or none of the three sciences, and only a little over one fourth have had training in all three. The California teachers present a slightly more favorable situation, nearly half of them having had contact with the three fields. The figures for both states, however, represent so unsatisfactory a condition as to suggest that probably no real effort is being made to train teachers in unified social science, and this despite the fact that two high school units, required of all students in the ninth and twelfth grades, depend upon such training.

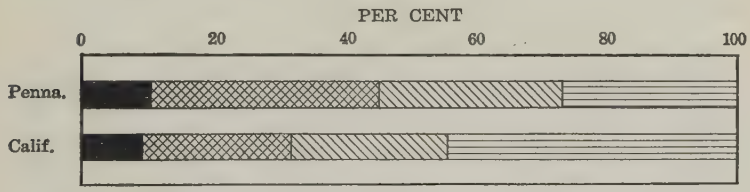


FIGURE 6. PERCENTAGES OF 87 PENNSYLVANIA AND 22 CALIFORNIA TEACHERS OF UNIFIED SOCIAL SCIENCE WHO HAVE HAD SOME TRAINING IN HIGHER INSTITUTIONS IN NONE, ONE, TWO, OR ALL THREE OF THE SOCIAL SCIENCES. (Black, training in none of the social sciences; cross-hatching, training in one; single-hatching, training in two; horizontal ruling, training in all three.)

The extent to which teachers of the social studies are prepared to teach the entire field. — From the 1923–1924 high school reports of the state of Minnesota, on file in the state department of education, were selected all those teachers of social studies who had graduated in the five-year period of 1919–1923 from the University of Minnesota and four colleges of the state — Carleton College, Hamline University, Macalester College, and St. Olaf College. Transcripts of the training of these teachers were made from the records of the

registrars of the five institutions. The transcripts showed the exact titles of the courses in social studies that had been pursued and the number of credits earned in each.

Some facts of importance regarding the 172 teachers with whom this study is concerned are given in Table XX. It shows that the teachers are almost evenly divided between the colleges on the one hand and the university on the other.

TABLE XX

NUMERICAL AND PERCENTAGE DISTRIBUTION, ACCORDING TO THE SIZE OF HIGH SCHOOL IN WHICH THEY WERE TEACHING IN 1923–1924, OF THOSE MINNESOTA TEACHERS OF SOCIAL STUDIES WHO GRADUATED IN THE FIVE-YEAR PERIOD, 1919–1923, FROM FOUR MINNESOTA COLLEGES AND FROM THE UNIVERSITY OF MINNESOTA

SIZE OF SCHOOL	FOUR COLLEGES		UNIV. OF MINN.		TOTAL	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
Group I	8	9.1	6	7.1	14	8.1
Group II	23	26.1	32	38.1	55	31.9
Group III	57	64.8	46	54.7	103	59.7
Total	88	100.0	84	99.9	172	99.7

It shows, also, that almost 60 per cent of the entire group were employed in schools having faculties of ten or fewer, the colleges furnishing a slightly larger proportion to schools of this size than the university.

Of the teachers studied, some were teaching full programs of social studies and some only partial programs, the subject-combinations no doubt being similar to those described in Chapter II. Many of them were in high schools of such size that one teacher could handle the entire social-studies program, and it is of interest to know how many were fitted for that. Accordingly, Table XXI is presented to show percentage dis-

tributions of the 172 teachers according to the number of semester-hours they had taken in each of six fields of social study. History is divided into ancient, European, and American. In many Minnesota high schools, as elsewhere over the country, distinct courses in all three fields are going forward. The social sciences are taught in most schools of the state as separate half-year courses, but in a few as unified courses. Table XXI shows that 71.5 per cent of the teachers have earned no college credit in ancient history, 5.8 per cent no credit in European history, 28.5 per cent no credit in American history, and so on across the table. The first line of the table shows that very large percentages of the teachers have had no training in the various fields, ancient history being least frequently studied. European history is the exception. It seems likely that the latter fares so much better than any of the others because a course in it is frequently required or virtually required of all students in their first or second years. As we look over the table, however, we note that larger proportions of the group have taken 9 and 12 hours of European history than is the case with any other field. This tendency cannot be so easily accounted for.

Table XXI shows, also, that a few teachers have specialized to quite an extent in one or another of the six fields except ancient history. We must conclude that some studied a narrow field more intensively than is advisable, when we consider the desirability of preparing to teach the entire field and one or two other fields, as recommended in Chapter II.

Figure 7 is designed to make more clear the extent to which the teachers took advanced courses in each of the six fields. It shows that European history claimed a much larger proportion for work beyond the elementary course than any other branch.

TABLE XXI

PERCENTAGE DISTRIBUTIONS OF THE 172 TEACHERS OF SOCIAL STUDIES ACCORDING TO THE NUMBER OF SEMESTER-HOURS THEY HAVE TAKEN IN EACH OF THE SIX FIELDS

No. of Hours	Ancient History	European History	American History	Political Science	Economics	Sociology
0	71.5	5.8	28.5	40.7	45.3	41.3
2	3.5		.6	.6	1.2	.6
3	10.5	4.7	12.2	18.0	4.1	18.0
4	.6	2.3	.6	.6	4.1	4.1
5	3.5			1.2	.6	6.4
6	4.7	22.1	20.3	15.1	15.1	11.6
7		3.5	4.1	.6	8.7	4.7
8	.6	2.9	1.2	.6	.6	1.7
9	2.3	17.4	7.0	5.8	3.5	1.7
10	1.7	1.2	5.8	1.2	1.7	1.7
11		.6	1.2	4.1	1.2	.6
12		18.0	7.0	6.4	2.3	1.7
13	.6	1.7	3.5		1.7	.6
14		1.7	1.7	1.2	1.2	
15	6	5.8	2.3	.6	2.9	.6
16		2.9	.6	.6	.6	
17		1.2	1.2	.6	.6	.6
18		4.1		.6	.6	
19		1.2	1.2			1.2
20		.6		.6	1.2	
21		.6	.6	.6	.6	
22		.6	.6			
23				.6		1.2
24		.6			.6	.6
25						.6
26		.6				
32					.6	
33					.6	
34						
35						.6
36					.6	
Total	100.1	100.1	100.2	100.3	100.2	100.1

The extent to which the teachers are prepared to teach the special field or fields they are teaching. — However much we may feel that training in each branch of the social studies improves one's preparation for teaching the other branches, it seems also very certain that nothing can well be substituted for a certain minimum of training in the special field being taught. We come, therefore, to the question, How much training in ancient history have the teachers of that subject

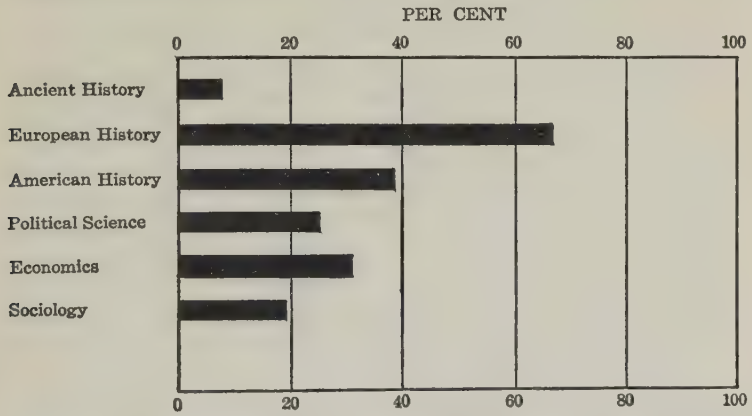


FIGURE 7. PERCENTAGES OF 172 MINNESOTA TEACHERS OF SOCIAL STUDIES WHO HAVE TAKEN SEVEN SEMESTER-HOURS OR MORE IN EACH OF THE SIX FIELDS NAMED.

had? Table XXII is the answer to that question and similar ones. To read the first line, 66.7 per cent, or exactly two thirds of the 57 teachers of ancient history included in our group of 172 teachers, have had no college course in that field. None of the 76 teachers of European history is without some training in that field. Of the 95 American history teachers 24.2 per cent have had no college course in the subject. For each of the social sciences the percentages of teachers without special training is high. In studying the European history

TABLE XXII

PERCENTAGE DISTRIBUTIONS OF THE TEACHERS OF EACH OF THE SIX FIELDS ACCORDING TO THE NUMBER OF SEMESTER-HOURS OF PREPARATION TAKEN IN THE PARTICULAR FIELD BEING TAUGHT

No. of Hours	Ancient History (57)	European History (76)	American History (95)	Political Science (19)	Economics (33)	Sociology (27)
0	66.7		24.2	36.8	45.5	25.9
2	5.3					
3	5.3	2.6	11.6	21.1	3.0	25.9
4	1.8	2.6			6.1	
5	3.5					11.1
6	8.8	19.7	22.1	26.3	15.2	7.4
7		5.3	4.2		9.1	3.7
8	1.8	5.3	2.1			3.7
9	3.5	17.1	7.4			7.4
10	3.5	2.6	6.3			
11			2.1		3.0	
12		23.7	6.3	5.3		
13		1.3	5.3			
14		1.3	3.2	5.3	3.0	
15		5.3	3.2	5.3	3.0	
16		3.9				
17						3.7
18		5.3				
19			1.1			
20		1.3				
21		1.3	1.1		6.1	
22						
23						
24		1.3				
25						3.7
32						3.7
33					3.0	
34					3.0	
35						
						3.7
Total	100.2	99.9	100.2	100.1	100.0	99.9

column we may note that 95 per cent of the teachers of that subject have taken six or more semester-hours in the field. Over half the teachers of political science, economics, and sociology have earned no more than four hours in their respective subjects, while of the teachers of the latter two subjects 10 or 12 per cent have earned from 21 to 35 hours.

But on the whole, Table XXII seems most significant because of the close correspondence between it and Table XXI in the percentages of teachers without any training — the first row of figures in each table. If we expected that the teachers of American history would be selected from those of the 172 who had had special training in that branch, we were mistaken. For every subject it seems the teachers might have been selected at random from the 172. Confronted by such a situation, we must conclude that the chances of being given a class in any one branch of the social studies are too slender to justify preparation especially for it. Rather, the candidate would do better to prepare moderately in each branch of the entire field, so that he will be ready to teach part or all.

The number of branches in which the teachers have taken a minimum of six hours of training. — For the sake of further measurement, let us assume that the minimum standard preparation for a teacher trained to teach the entire program of social studies in the high school should be as follows:

Field	*Semester-hours*
Ancient history	6
European history	6
American history	6
Political science	6
Economics	6
Sociology	6
Total	36

In how many fields do the 172 teachers meet the six-hour minimum?

Table XXIII gives the answer. It shows that over 50 per cent of the graduates of the colleges have met the minimum in but one or two of the six fields. The university graduates have a slightly better record, not quite 40 per cent having been so prepared in no more than two fields. The record of only one person of the 172 meets the minimum for all fields, and only 5 per cent meet it for as many as five fields. Figure 8 makes more emphatic our impression that we simply do not have teachers properly equipped to teach over the entire field of social studies.

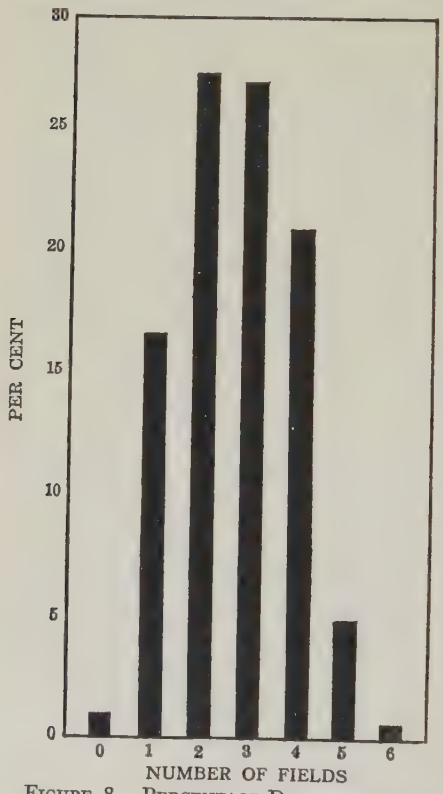


FIGURE 8. PERCENTAGE DISTRIBUTION OF 172 MINNESOTA TEACHERS OF SOCIAL STUDIES ACCORDING TO THE NUMBER OF FIELDS IN WHICH THEY HAVE HAD AT LEAST SIX HOURS OF COLLEGIATE TRAINING.

It may be, however, as pointed out in the previous chapter, that on account of the need for many fractional teachers for the various departments, due to the variance in the size of high schools, that there should be some teachers equipped with a minor in social studies. How do the teachers of this study qualify for these minors? To determine the

answer as regards the history minor, Table XXIV was prepared, based on those teachers whose records showed 18 or

TABLE XXIII

PERCENTAGE DISTRIBUTION OF THE 172 TEACHERS OF SOCIAL STUDIES ACCORDING TO THE NUMBER OF FIELDS IN WHICH THEY HAVE AT LEAST SIX HOURS OF COLLEGIATE TRAINING

No. of Fields	College Graduates (88)	University Graduates (84)	Total (172)
0		1.2	.6
1	19.3	14.3	16.9
2	31.8	23.8	27.9
3	26.1	28.6	27.3
4	21.5	22.6	22.1
5	1.1	8.3	4.7
6		1.2	.6
Total	99.8	100.0	100.1

more hours of history. There were 80 individuals of this description, and the table shows that the great majority had achieved the six-hour minimum in but two of the fields.

TABLE XXIV

NUMERICAL AND PERCENTAGE DISTRIBUTIONS OF THE TEACHERS WHO HAVE TAKEN 18 OR MORE HOURS OF HISTORY, ACCORDING TO THE NUMBER OF HISTORY FIELDS IN WHICH THEY HAVE MET THE SIX-HOUR MINIMUM

No. of History Fields	College Graduates		University Graduates		Totals	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
1	4	11.1	1	2.3	5	6.3
2	28	77.8	31	70.5	59	73.8
3	4	11.1	12	27.3	16	20.0
Total	36	100.0	44	100.1	80	100.1

Only one fifth meet the standard in all three fields. Table XXV indicates that 56 teachers had earned a total of 18 credits in social science, but a full quarter meet the six-hour minimum in but one of the sciences and almost three fifths meet the standard in two fields. Only one sixth have their

TABLE XXV

NUMERICAL AND PERCENTAGE DISTRIBUTIONS OF THE TEACHERS WHO HAVE TAKEN 18 OR MORE HOURS OF SOCIAL SCIENCE, ACCORDING TO THE NUMBER OF SOCIAL-SCIENCE FIELDS IN WHICH THEY HAVE MET THE SIX-HOUR MINIMUM

No. of Social-science Fields	College Graduates		University Graduates		Totals	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
1	5	22.7	9	26.5	14	25.0
2	10	45.5	23	67.6	33	58.9
3	7	31.8	2	5.9	9	16.1
Total	22	100.0	34	100.0	56	100.0

hours distributed over all three fields. It is quite plain that very few teachers are being trained, even in accordance with the low standard here assumed, to teach such obvious minors as history and social science, fields involving two high school units each.

The college and university courses in social studies, which the teachers have taken. — We have thus far assumed that any six hours in European history constituted as good training as any other six hours in that field. In fact, we have assumed that the six hours presented by Teacher A was coincident with the six hours presented by Teacher B. Table XXVI exposes the inaccuracy of such assumptions. It shows that Teacher A may have earned his six hours in a general survey of the

TABLE XXVI

THE COURSES TAKEN IN THE FIELD OF SOCIAL STUDIES BY 88 GRADUATES OF FOUR COLLEGES AND 84 GRADUATES OF THE UNIVERSITY OF MINNESOTA, ALL TEACHERS OF SOCIAL STUDIES, WITH THE FREQUENCIES OF ENROLLMENT FOR EACH COURSE

NAME OF COURSE	ENROLLMENT FREQUENCIES		PREVAILING CREDIT
	College	University	
ANCIENT HISTORY			
Ancient Civilization		14	2–7
History of Greece	6	13	2–3
History of Rome	8	32	2–3
EUROPEAN HISTORY			
Medieval and Modern	13	44	6
Medieval	22	13	6
European History (476–1789)	9		6
Modern History (15th Cent.–)	15		6
Modern World (1648–1918)		24	7
Renaissance and Reformation	32	24	3–6
Revolutionary and Napoleonic Era	28	9	3–4
Europe in the 19th Century	24	4	3–6
Europe (1848–1914)		5	3–7
Europe since 1870	1		6
Economic History of Europe		1	6
Contemporary History	13	21	2–6
English History	18	27	6–7
Development of British Empire	7		3–6
English History (1815–1920)		2	2–4
English Constitutional History		1	3
Industrial and Social History of Eng.	7		3
AMERICAN HISTORY			
American History (1492–)	6		6
History of United States (1783–1860)	38	50	3
History of United States (1860–)	29	46	3–4
History of United States (1775–1870)	3		6
Constitutional History of United States	2	3	3–4
American Colonial History	14	20	3–4
The American Revolution	2		3
The Westward Movement	4	6	2–3
History of American Diplomacy	10	15	2–6

TABLE XXVI — *Continued*

Name of Course	Enrollment Frequencies		Prevailing Credit
	College	University	
History of American Immigration		22	2–5
History of Minnesota		8	3–4
Recent American History	11	5	3–6
Civil War and Reconstruction	2	4	2–3
Seminar in American History	1		3
Industrial and Social History of United States	7		3
Political Science			
United States Government	21		3–6
Federal Government of United States		61	3
State and Local Government		44	3
Municipal Government	5	19	3–5
Elements of Political Science (Theory)	2	13	3
Government of British Empire	1	1	3
Law of Labor		1	3
Comparative Government	13	11	3
Political Parties	2	1	3
International Law and Politics	7	8	3–6
Roman Law	4		3
Elementary Law	2		3
Contemporary Political Problems		3	2
Constitutional Law		5	3
Economics			
Principles of Economics	46		3–8
Principles and Problems of Economics	5	37	6–7
Industry and Commerce		3	3–7
Labor Problems	9	6	2–3
Money and Banking	10	6	3–7
Credit System	2	2	3–5
Corporate Organization and Finance	6	6	3–7
Public Finance	3	3	3–4
Transportation	1	3	2–6
Government and Business		1	2
Modern Economic and Political Problems	2		3
Modern Industrial Movements	1	3	2–4
History of Economic Theory	1		3
Commercial Policies		4	2

TABLE XXVI — *Continued*

Name of Course	Enrollment Frequencies		Prevailing Credit
	College	University	
Socialism and Economic Reform	5	1	3
Financial History of United States	1	1	3
Economic and Industrial History of United States	8	5	3–7
Economic Geography	8		3
Sociology			
Principles	28	49	2–6
Introduction to Sociology (Some Problems)	17		3–6
Social Problems	11	3	3–6
Educational Sociology	4	9	2–3
Delinquency	7		3
Dependency, Deficiency, Delinquency		13	2–6
Modern Social Reform Movements		22	2
History of Social Ideas	4	1	3
Methods of Social Investigation		5	2–8
Vocational Survey	4		1
Social Psychology	5	3	2–3
Urban Communities	1	6	2
Anthropology	4	2	2–3
Rural Sociology	2	8	2
Social Control		1	2
Child Welfare	2	6	2–4
The Family	2	7	2–4
Social Statistics		1	2
Social Organization		1	2
Church and Society	3		3
Teachers' Course in History	18	16	2–3

medieval and modern periods of European history, while Teacher B may have studied the renaissance and reformation eras quite intensively for the same credit. There are, indeed, a number of cases where this very distinction appears. Aside from any particular instances, however, the table makes it evident that teachers vary quite widely in the courses which

they take in any given field. Are these courses all equally worth while from the standpoint of preparing a teacher of the social studies? Shall we consider a course in Roman law as valuable as a course in municipal government for the teacher of community civics or traditional civics? We have no scientific basis for an answer to such questions. But any one possessed of the functional viewpoint must realize that some courses have greater value than others for any given purpose. The social core in the high school curriculum is designed to instill common ideals and a common intelligence among the people of a democracy. To do this certain materials are selected; to be consistent certain training ought to be selected for the teacher. But Table XXVI serves as the climax to all the previous evidence that curricula for the training of teachers according to the subjects they teach have not yet been evolved, or at least are only in their beginnings.

It seems from Table XXVI that the teachers here investigated have been privileged to wander pretty much at will over those departments of a liberal arts program of studies which are here represented. Yet the attainment of a liberal education is not the only end for the prospective teacher in his selection of academic courses. For him there is a professional end also to be achieved, and by this he must in part be guided in his choice of courses. Certainly a curriculum functioning as a medium for the training of teachers of the social studies would require more uniformity of training than Table XXVI exhibits.

Conclusions, with recommendations. — From the facts presented the following conclusions seem justified:

1. So few of the teachers of social studies in Minnesota present well-balanced preparation in all the branches of that field which appear in the high school curriculum as to signify

the failure of the teacher-training institutions involved to recognize the relatedness of the field and to equip some of their graduates to teach it in its entirety. While the facts are a direct index to the policies of only five institutions, data will be presented in a later chapter which will suggest that they are fairly representative of similar colleges and universities over the entire country.

2. Even when the field of social studies is broken up into history and social science, we find that very few teachers are being given sufficiently well-rounded training to equip them for the teaching of either of these branches.

3. A few teachers have specialized so highly in a single branch of the social studies as to preclude the possibility of adequate preparation in the other branches and in other curricular fields to equip them for such a program of subjects as they must expect to teach.

4. The teachers of any particular social study are evidently not chosen on the basis of special preparation in that branch of the general field, a fact which suggests that they should have moderate preparation in all branches.

5. Examination of the particular courses pursued, in so far as the mere study of titles permits, shows that the teachers' background in any particular branch varies widely. This signifies more clearly than before the absence of any attempt to derive a functional curriculum for teachers of the social studies. Presumably the function of liberal training prevails to the submergence of the professional aim.

The most obvious remedy which the conditions demand is the guidance of teachers in their selection of subject-matter courses to the end that there shall be considerable numbers with adequate training for a field so well coördinated as that of the social studies. This guidance should doubtless ema-

nate from the certificating authorities as well as the teacher-training institutions. Of direction from each of these sources the following are the best instances known to the writer.

The state of Indiana [1] certificates a teacher for the entire field of social studies upon presentation of the following credits:

General history	12
United States history	12
Economics	6
Political science	6
Total	36

A teacher may be certificated for history upon presentation of 24 credits about evenly divided between general history and United States history, or for social science upon presentation of 24 credits in that field, with not less than six each in economics, political science, and sociology.

The catalogue of the College of Education of the University of Minnesota [2] contains a statement of the need for teachers with well-rounded training in social studies, and recommends a major in history and minor in social science, or the same subjects in reverse emphasis. The first combination, expressed in semester-hours, is approximately as follows:

History	24
Political science	9
Economics	6
Sociology	6
Total	45

The history hours are not defined further than that they must include "at least the general course in American history," and "one of the courses taken must be of intensive grade."

[1] Teacher Training and Licenses, etc., *Educational Bulletin*, No. 64. Indianapolis: State Superintendent of Public Instruction, 1923.

[2] The College of Education Announcement for the Year 1922–1923, *The Bulletin of the University of Minnesota*, Vol. 25, No. 35, Aug. 7, 1922, p. 51.

The courses stipulated for political science are one in federal government, one in state government, and one either in municipal government or political science theory. The customary " principles " course in economics constitutes the six hours in that field. In sociology three courses make up the requirement: " Introduction to Sociology," " Modern Social Reform Movements," and " Rural Sociology."

The reverse combination, involving the greater emphasis on social science, is not so sharply defined, but requires about 36 hours somewhat evenly divided between the three social sciences, and 12 hours in history, including the general course in American history.

That there is an awakening sentiment in favor of such standards is indicated by the action of the National Council for the Social Studies in adopting standards of training at their meeting in February, 1925. The following is one of the standards adopted:

> The minimum preparation of any teacher of history, economics, sociology, or government in subject matter, shall be 30 per cent (36 hours) of the total requirements for the Bachelor's degree in the four subjects of history, economics, sociology, and government; of which at least 15 per cent (18 hours) of the total requirements shall be in the selected major study, and the other 15 per cent (18 hours) in the other three, with a minimum of 5 per cent (6 hours) in history.[1]

The National Council is a teacher's organization. Its action is indicative of a developing professional spirit that should exercise great force in the improvement of the conditions that have been described.

These illustrations point the way to the attainment of the sort of scholarship that is needed in our teachers of social

[1] "Fifth Annual Meeting of the National Council for the Social Studies." *The Historical Outlook*, Vol. 16, p. 143, April, 1925.

studies. The facts of this study constitute the beginnings of a scientific basis for curricula. With more intensive job analyses we shall be able to make more accurate curricular prescriptions in the training of teachers of the social studies. But in the meantime great progress is possible if the teacher-training authorities will be guided by a functional philosophy and such facts as have been established.

CHAPTER IV

THE SPECIALIZED PREPARATION OF TEACHERS OF ENGLISH

A. Standards of Preparation

The training of the English teacher, like that of other teachers, should be determined by a job analysis of the work that he has to do. The fact that this has never been done, or at least not done with such thoroughness as to merit any widespread recognition, renders impossible the finding of any well-defined standards on which we can measure the training of teachers of English. Indeed, as will be demonstrated in later chapters, there is but little tendency the country over to demand any exact qualifications of the English teacher, other than that he should possess the academic degree. On the basis of expert observation, however, a few brief statements of the larger component elements of an English teacher's training have been made. The most authoritative of these will be reviewed, and, unrefined as they may be, will be pressed into our service as criteria for passing judgment on the training that English teachers have.

Perhaps the foremost of these statements is that made by the group of experts in the teaching of English who comprised the National Joint Committee on English, representing the Commission on the Reorganization of Secondary Education of the National Education Association and the National Council of

Teachers of English. In their extended report [1] on the high school curriculum in English they included a brief section on the preparation of teachers. Concerning college and university curricula for the training of English teachers they made the following statement:

> That they should include (1) studies in the nature and elements of the various literary types, in addition to a broad reading knowledge of English and American literature, (2) sufficient training in oral and written composition, including public speaking, (3) a course in the application of educational principles to the teaching of English in the high school, and (4) actual practice under direction, may safely be affirmed.

The Committee's recommendations for the high school curriculum quite obviously pointed to these elements suggested for the teacher's training. In fact, any one conversant with existing high school curricula will recognize the teacher's need of such background.

A second standard worthy of mention is that set up by the Indiana certification law, mentioned in previous chapters. To receive a first grade license for the teaching of English in an Indiana high school, the candidate must present 28 semester-hours, distributed as follows:

Grammar and composition	6
English literature	9
American literature	6
Oral expression	3
"Professional academic preparation"	4

We have here a statement mentioning approximately the same elements as those proposed by the committee of experts. It is further suited to our purpose in that it suggests in semester-hours the proportion of the college course that should be

[1] Hosic, James Fleming, Chairman. "Reorganization of English in Secondary Schools," 149. United States Bureau of Education *Bulletin*, 1917, No. 2.

devoted to specialized preparation, and by the same measure it also weights the several elements of the required training. When we consider, however, the breadth of college offerings in the branches mentioned by this standard, we recognize that the prescription still allows great latitude in choice of courses.

A third statement of what the English teacher's training should be is less definite quantitatively but is more suggestive in a qualitative way, than the Indiana standard. This is the statement of Miss Emma J. Breck, head of the department of English, University High School, Oakland, California, who was a member of the committee of experts in English that drafted the statement just quoted. Miss Breck says [1] that the specialized preparation of the English teacher should include a broad survey of English and American literature, "the latter of which is still absolutely foreign soil to many college graduates." There should be a course in literary types, with wide illustrative and comparative reading, and "at least a semester's work in Shakespeare, not textual criticism nor tracing of sources nor even largely analysis of plots, but an understanding study of human beings as pictured in his dramas, a discovery of the inevitability of great moral laws as revealed in their actions and fates, a recognition of great thoughts expressive of ripe wisdom and knowledge of life. . . . There should also be a course in the history of language; not the close study of Old English that tradition still insists upon as essential preparation for the teaching of modern English, but a broad general course that would show our place in the great family of languages, the various strains that enter into our composition, the main changes that have made English the practically uninflected language it is to-day." A

[1] "Present-Day Needs in the Training of English Teachers." *English Journal*, Vol. 12, pp. 545–556, October, 1923.

survey of modern English grammar might well be included, " a subject of which most of the four or five hundred college graduates with whose preparation I have been conversant in the last eight years know practically nothing." There should be a " broad reading course in current literature, an opportunity which, judging from a study of university catalogues, is rarely available. It may be sufficient as training for higher degrees that students should walk with faces turned to the past, but it is impossible so to lead the youth of to-day." There should be a " course in advanced writing."

It may well be that a chief distinction between Miss Breck's standards and those of the state of Indiana is one of idealism versus practicability. Those who framed the Indiana law no doubt had in mind the fact that the state must accept teachers from a variety of going institutions in and out of the state and that many of the teachers must be prepared to teach one or two other subjects or subject groups. Accordingly, they set up requirements which are perhaps as high and as detailed as the practical situation in Indiana warrants at the present time. Probably, also, empirically derived standards, when given the force of law, should not be more specific.

Some of Miss Breck's specifications for training in literature may be seen to have some support in the aims of high school English and the curricular materials and organization suggested by the national committee already quoted. The report of this committee has profoundly influenced English teaching the country over. From their elaboration of the aim of teaching literature, we quote the following:

Knowledge of books and power to read them thoughtfully and with appreciation includes:

(1) Ability to find pleasure in reading books by the better authors, both standard and contemporary, with an increasing knowledge of such books and increasing ability to distinguish what is really good from what is trivial and weak.

(2) Knowledge of a few of the greatest authors, their lives, their chief works, and the reasons for their importance in their own age and in ours.

(3) Understanding of the leading features in structure and style of the main literary types, such as novels, dramas, essays, lyric poems.[1]

The first and second of these aims seem to point to Miss Breck's suggested broad surveys of English and American literature, courses which would emphasize the relation between literature and life. Perhaps the first aim also points to Miss Breck's "broad reading course in current literature." The third aim suggests very directly the course in literary types advocated by Miss Breck. Throughout the report the committee assumed that the English teacher must be the pupils' guide and counselor in reading — not merely a hearer of cut-and-dried lessons on a certain few classics — which naturally presumes a background of wide reading and understanding.

From the three sets of standards the writer feels justified in setting up tentatively the following as minimum requirements in the training of an English teacher:

Written composition	Survey of American literature
Oral expression	Literary types
Survey of English literature	The teaching of English

Probably adequate contact with these branches would require no less than 27 or 30 semester-hours. With such a list in mind, the training of English teachers can be criticized.

[1] Hosic, J. F., *op. cit.*, 31 f.

B. The Specialized Preparation that English Teachers Have

In order to secure the records of a representative group of English teachers for more analytical study than was possible in the general studies of California and Pennsylvania teachers as reported in Chapter II, the writer went to the same source as for the teachers of social studies reported in the last chapter. That is, he selected from the 1923–1924 high school reports of the state of Minnesota, on file with the state department of education, all those teachers of English who had graduated in the five-year period of 1919–1923 from the University of Minnesota and four colleges of the state — Carleton College, Hamline University, Macalester College, and St. Olaf College. Transcripts of the training of these teachers were made from the records of the registrars of the five institutions. The transcripts showed the exact titles of the courses in English that had been pursued and the number of credits earned in each.

In studying these records to determine the degree to which they represent an attainment of the standards which have been suggested, it seemed advisable to divide the teachers into three groups on the basis of the total number of credits they had earned in English. Some, with only a few hours, certainly could not be expected to have gained contact with more than one or two of the fields. From others, with major training in English, more could be expected. Accordingly, those with less than 24 semester-hours are characterized as having "minor" training; those with from 24 to 35 hours inclusive are denoted as having "major" training; and those with 36 or more hours will be known as "super-majors." Table XXVII gives numerical and percentage distributions of the teachers on this basis for both the college and university

groups. Examination of this table shows that a much larger percentage of the university graduates have minor training than is true of the college graduates, while the situation is reversed in the size of the groups with major training. No reason for this difference can be assigned. Rather large proportions of both the university and college groups — over forty per cent — have super-major training. For a further description of the three different degrees of training, the median number of hours for each has been computed and is entered in the table.

TABLE XXVII

NUMERICAL AND PERCENTAGE DISTRIBUTIONS OF 211 ENGLISH TEACHERS, ACCORDING TO THE EXTENT OF THEIR TRAINING IN ENGLISH

EXTENT OF TRAINING	UNIVERSITY			FOUR COLLEGES		
	Number	Per Cent	Median hours	Number	Per Cent	Median hours
Minor (0–23 hours) .	41	41.8	14.8	15	13.3	13.5
Major (24–35 hours) .	14	14.3	28.5	52	46.0	31.0
Super-major (36 or more hours) . . .	43	43.9	50.2	46	40.7	42.6
Total	98	100.0		113	100.0	

The courses which the teachers had taken were classified, as they were tabulated, into nine categories, each of which seemed to the writer to be quite distinct and necessary. If the reader will refer for the moment to Table XXXIII, he may note the categories and the names of the courses that are listed under each. The courses were tabulated before the standards were studied. It will be discerned at the outset that three of the categories are not mentioned in the minimum standards decided upon, namely, journalism, language, literary criticism. Nevertheless, courses in all three appear

in the English departments of most accredited colleges of liberal arts and are taken by those preparing to teach as well as by students who are destined for other professions.

TABLE XXVIII*a*

PERCENTAGE DISTRIBUTIONS OF 41 TEACHERS OF ENGLISH (GRADUATES OF UNIVERSITY OF MINNESOTA) WHO HAVE TAKEN LESS THAN 24 SEMESTER-HOURS OF ENGLISH, ACCORDING TO THE NUMBER OF SEMESTER-HOURS THEY HAVE TAKEN IN THE SEVERAL FIELDS OF ENGLISH

No. of Hours	Composition	Journalism	Pub. Spkg.	Language	Criticism	English Survey	American Lit.	Advanced Eng. Lit.	Teachers' Courses
0		100.0	70.7	97.6	97.6	26.8	92.7	68.3	100.0
1								2.4	
2			2.4						
3			4.9			2.4	2.4	14.6	
4	2.4		9.8			2.4	4.9	4.9	
5	19.5			2.4		22.0		2.4	
6	56.1		9.8		2.4	39.0		4.9	
7						4.9			
8	4.9		2.4					2.4	
9									
10						2.4			
11	4.9								
12	12.2								
Total	100.0	100.0	100.0	100.0	100.0	99.9	100.0	99.9	100.0

TABLE XXVIII*b*

PERCENTAGE DISTRIBUTIONS OF 15 TEACHERS OF ENGLISH (GRADUATES OF FOUR COLLEGES) WHO HAVE TAKEN LESS THAN 24 SEMESTER-HOURS OF ENGLISH, ACCORDING TO THE NUMBER OF SEMESTER-HOURS THEY HAVE TAKEN IN THE SEVERAL FIELDS OF ENGLISH

No. of Hours	Composition	Journalism	Pub. Spkg.	Language	Criticism	English Survey	American Lit.	Advanced Eng. Lit.	Teachers' Courses
0		93.3	46.7	93.3	100.0	60.0	93.3	73.3	93.3
1									
2				6.7					
3		6.7					6.7	6.7	6.7
4	6.7		33.3						
5									
6	86.8		6.7			33.3		13.3	
7									
8	6.7		6.7						
9								6.7	
10						6.7			
11									
12			6.7						
Total	100.2	100.0	100.1	100.0	100.0	100.0	100.0	100.0	100.0

Tables XXVIII*a* and XXVIII*b* show the extent to which the teachers who have had minor training (0–23 hours) in English have gained contact with each of the nine divisions. Every teacher has taken some composition, the major portion of each group having had six hours in that field, which represents the course commonly required of freshmen in most higher institutions. A few of the 41 university graduates have taken as much as 12 hours in composition. The number who have had 5 hours of composition is explained by the fact that for a part of the period during which these teachers were pursuing university studies the freshman English course was one of 10 hours, about half devoted to composition and half to a survey of English literature. To make the analysis more clear, 5 hours were classified as composition and 5 hours as English survey. To proceed with the study of Table XXVIII*a*, it will be noted that almost three quarters of the university graduates have had no course in public speaking, more than one quarter have had no survey course in English literature, scarcely any have studied American literature, 68.3 per cent have taken no advanced courses in English literature, and no member of the group has taken a course in the teaching of English. It seems that there are but two of the six branches of English embodied in our standards, in which these teachers have with any consistency received training, namely, written composition and the survey of English literature.

Of the fifteen teachers (graduates of four colleges) whose training is analyzed in Table XXVIII*b*, the figures will be seen to be similar to those in Table XXVIII*a*, with two exceptions. The fraction who have had no course in public speaking is slightly less than half, while the proportion who have had no course in the survey of English literature is three fifths. Insofar as these fifteen teachers are representative, it seems

that graduates of the four colleges with less than major training can be expected to have had only the required course in written composition.

We turn now to the teachers having major training (24 to 35 hours). The members of this group presumably have satisfied the requirements of a major, as commonly prescribed in the liberal arts college, with work in the English department. While the number of hours required for a major varies in different institutions, it is more commonly 24 than any other number. What training may be expected of these people by the superintendents who engage them to teach English? Can they be expected to handle all branches of this many-sided subject with efficiency?

Table XXIX*a*, based on but 14 university graduates, shows that almost 60 per cent have taken either 11 or 12 semester-hours in composition courses, that 42.9 per cent have had no

TABLE XXIX*a*

PERCENTAGE DISTRIBUTIONS OF 14 TEACHERS OF ENGLISH (GRADUATES OF UNIVERSITY OF MINNESOTA) WHO HAVE TAKEN FROM 24 TO 35 SEMESTER-HOURS OF ENGLISH, ACCORDING TO THE NUMBER OF SEMESTER-HOURS THEY HAVE TAKEN IN THE SEVERAL FIELDS OF ENGLISH

No. of Hours	Composition	Journalism	Pub. Spkg.	Language	Criticism	English Survey	American Lit.	Advanced Eng. Lit.	Teachers' Courses
0		100.0	42.9	78.6	100.0		64.3	7.1	92.9
1									
2				7.1					7.1
3							7.1	21.4	
4			7.1	7.1			28.6	7.1	
5	7.1		7.1	7.1		28.6			
6			28.6			71.4		35.7	
7									
8			7.1					7.1	
9	7.1							21.4	
10	7.1								
11	21.4								
12	57.1								
13									
14			7.1						
Total	99.8	100.0	99.9	99.9	100.0	100.0	100.0	99.8	100.0

TABLE XXIX*b*

PERCENTAGE DISTRIBUTIONS OF 52 TEACHERS OF ENGLISH (GRADUATES OF FOUR COLLEGES) WHO HAVE TAKEN FROM 24 TO 35 SEMESTER-HOURS OF ENGLISH, ACCORDING TO THE NUMBER OF SEMESTER-HOURS THEY HAVE TAKEN IN THE SEVERAL FIELDS OF ENGLISH

No. of Hours	Composition	Journalism	Pub. Spkg.	Language	Criticism	English Survey	American Lit.	Advanced Eng. Lit.	Teachers' Courses
0	3.8	88.5	48.1	65.4	82.7	9.6	57.7	15.4	42.3
1		7.7	1.9		3.8				1.9
2			5.8						36.5
3		1.9	1.9	5.8	7.7	7.7	23.1	5.8	13.5
4			26.9			1.9	1.9		
5			1.9	1.9				1.9	3.8
6	76.9	1.9		26.9	5.8	50.0	11.5	40.4	1.9
7						5.8			
8	1.9					5.8		1.9	
9	9.6							7.7	
10						3.8	3.8	1.9	
11	1.9								
12	3.8		1.9			15.4	1.9	17.3	
13									
14			3.8						
15			1.9					3.8	
16			1.9						
17			1.9						
18	1.9							1.9	
19									
20									
21			1.9						
22									
23									
24									
25									
26									
27								1.9	
Total	99.8	100.0	99.8	100.0	100.0	100.0	99.9	99.9	99.9

course in public speaking, that all have had a course in the survey of English literature (either 5 or 6 hours), and that more than three fifths have taken no American literature. All with one exception have taken from 3 to 9 hours of advanced courses in English literature. These, it will be noted in Table XXXIII, are in the nature of courses dealing with particular writers, special periods, or one type of literature, as, Milton, the Romantic Movement, and the English novel. Only one of these persons has taken a course in the teaching

of English. To summarize the facts of this table in terms of our standards, it seems clear that the superintendent cannot really expect these teachers to have had training in more than two of the necessary branches — composition and English survey. Although American literature figures heavily in the high school program, the great majority of these teachers have had only elementary school and high school experiences in that field. As for the acquisition of advanced understanding in literary types — set up as one of our standards — Table XXXIII shows that only four of the entire group of 211 teachers here investigated have had a systematic course in that branch. The four are all in the college group. A teacher's course, to acquaint the teacher with the curriculum and methods of high school English, is an experience these teachers have not had. With oral expression, almost half of them have had no collegiate contacts; yet its importance as a branch of high school English is attested to on every hand.

When we turn to Table XXIX*b*, based on 52 college graduates of the same total hours of training in English as the university graduates just reviewed, we find substantially the same situation. Public speaking, literary types, American literature, and the teachers' course are neglected by large percentages, we learn from a glance across the first row of figures. The majority of the teachers have taken one or more specialized courses in English literature. Quite a number have taken from 7 to 12 hours in English surveys, which means that in addition to the first collegiate course in English literature they have earned credit in a course termed "Masterpieces of Literature," offered in two of the colleges and here classified under English survey courses for want of a more fitting category.

Tables XXIX*a* and XXIX*b* deserve careful study. They

depict teachers with supposedly good training. One is quite safe in saying that the majority of teacher-training, teacher-hiring, and teacher-certificating authorities have long felt that a teacher having 24 hours of preparation in any given subject was well-equipped. But if the standards by which we are here measuring have any worth, that assumption is ill-founded.

To throw more light on the training of these teachers, Table XXX and Figure 9 have been prepared. They repre-

TABLE XXX

DISTRIBUTION OF 52 TEACHERS OF ENGLISH (GRADUATES OF FOUR COLLEGES) WITH SPECIALIZED TRAINING OF FROM 24 TO 35 SEMESTER-HOURS, ACCORDING TO THE NUMBER OF DESIRED FIELDS OF ENGLISH WITH WHICH THEY HAVE HAD TRAINING CONTACT

NUMBER OF FIELDS	TEACHERS	
	Number	Per Cent
0		
1		
2	5	9.6
3	27	51.9
4	13	25.0
5	7	13.5
6		
Total	52	100.0

sent the same teachers as Table XXIX*b* and show that over half of them have had college training in but three of the six fields which were set up as a desirable minimum.

Now, we have left for this analysis the records of a considerable number of teachers whose training in English — 36 hours or more — may with some justification be termed super-major. Table XXVII showed the group of university graduates with this extended preparation to have 50.2 as their

median number of hours; the college graduates, a median of 42.6 hours. We may say of these groups that their work in English represents from one third to one half of their college credits. Does such a showing in semester-hours assure high school students a teacher of well-rounded training, possessed of a background adequate for all the different phases of English teaching? Tables XXXI*a* and XXXI*b* afford an answer.

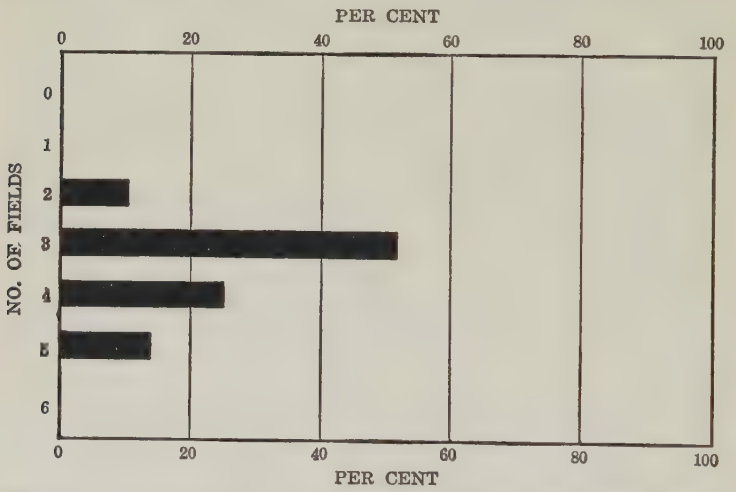


FIGURE 9. DISTRIBUTION OF 52 TEACHERS OF ENGLISH (GRADUATES OF FOUR COLLEGES) WITH SPECIALIZED TRAINING OF FROM 24 TO 35 SEMESTER-HOURS, ACCORDING TO THE NUMBER OF DESIRED FIELDS OF ENGLISH WITH WHICH THEY HAVE HAD TRAINING CONTACT.

The first of these tables, relating to the university graduates, shows that all or practically all the teachers have had some contact with courses in composition, public speaking, and a survey of English literature. More than half, however, have had no American literature, and more than three quarters have had no teachers' course. None have had a course devoted to literary types. The table shows that large numbers

have had twelve or more hours of special courses in English literature and the same in the field of composition. The former of these specializations may somewhat compensate

TABLE XXXI*a*

PERCENTAGE DISTRIBUTIONS OF 43 TEACHERS OF ENGLISH (GRADUATES OF UNIVERSITY OF MINNESOTA) WHO HAVE TAKEN 36 OR MORE SEMESTER-HOURS OF ENGLISH, ACCORDING TO THE NUMBER OF SEMESTER-HOURS THEY HAVE TAKEN IN THE SEVERAL FIELDS OF ENGLISH

No. of Hours	Composition	Journalism	Pub. Spkg.	Language	Criticism	English Survey	American Lit.	Advanced Eng. Lit.	Teachers' Courses
0		97.7	7.0	55.8	88.4	4.7	51.2		76.7
1									
2							4.7		9.3
3				16.3		4.7	14.0	4.7	14.0
4	2.3		4.7	14.0		4.7	23.3	2.3	
5				2.3		25.6		2.3	
6	2.3	2.3	37.2	7.0	11.6	58.1	7.0		
7			18.6			2.3			
8			4.7	2.3				2.3	
9								9.3	
10	2.3		2.3						
11	20.9							9.3	
12	39.5		14.0					2.3	
13	2.3			2.3				4.7	
14	2.3							2.3	
15	2.3							9.3	
16	4.7							9.3	
17	4.7		2.3					7.0	
18	7.0								
19	2.3		7.0					9.3	
20									
21			2.3					2.3	
22									
23								7.0	
24	4.7								
25	2.3								
26								7.0	
27									
28									
29									
30									
31								2.3	
32									
33								4.7	
34									
35									
36									
37								2.3	
Total	99.9	100.0	100.1	100.0	100.0	100.1	100.2	100.0	100.0

TABLE XXXI*b*

PERCENTAGE DISTRIBUTIONS OF 46 TEACHERS OF ENGLISH (GRADUATES OF FOUR COLLEGES) WHO HAVE TAKEN 36 OR MORE SEMESTER-HOURS OF ENGLISH, ACCORDING TO THE NUMBER OF SEMESTER-HOURS THEY HAVE TAKEN IN THE SEVERAL FIELDS OF ENGLISH

No. of Hours	Composition	Journalism	Pub. Spkg.	Language	Criticism	English Survey	American Lit.	Advanced Eng. Lit.	Teachers' Courses
0		82.6	10.9	67.4	60.9	34.8	28.3		32.6
1		4.3							
2									4.3
3		6.5	4.3	4.3	30.4		30.4	4.3	54.4
4			19.6						
5									
6	65.2	4.3	4.3	23.9	6.5	56.5	41.3	13.0	8.7
7			2.2	2.2					
8	2.2		4.3					2.2	
9	10.9		2.2	2.2	2.2	2.2		10.9	
10	4.3		6.5			4.3		2.2	
11	4.3	2.2							
12	8.7		23.9			2.2		30.4	
13	2.2		2.2						
14									
15			2.2					15.2	
16			2.2						
17	2.2		2.2						
18			6.5					13.0	
19									
20									
21								8.7	
22			2.2						
23									
24			2.2						
25									
26									
27			2.2						
Total	100.0	99.9	100.1	100.0	100.0	100.0	100.0	99.9	100.0

for the absence of a particular course in literary types, but to satisfy the deficiencies in American literature and in the field of professional academic training we find no substitute. If our standards have value, courses in the branches they stipulate should take precedence over extended specialization in any field of English.

Table XXXI*b* reveals a situation similar to that of Table XXXI*a* in composition and public speaking. In the field of the English survey, however, more than a third have had no

course, a situation which is due primarily to the practice of one college in offering no such course. The percentages who have not had American literature and a teachers' course are smaller than in the corresponding group of university graduates, but they are still large. The number who have had advanced courses in composition is not so large as in the university group, but two thirds have taken twelve or more hours in special English literature courses. We must conclude from these tables that a large number of credits in the department of English gives no assurance that contact has been made with all of the fields which constitute the minimum standard for the training of an English teacher.

TABLE XXXII

DISTRIBUTION OF TEACHERS OF ENGLISH WITH SPECIALIZED TRAINING OF 36 OR MORE HOURS, ACCORDING TO THE NUMBER OF DESIRED FIELDS OF ENGLISH WITH WHICH THEY HAVE HAD TRAINING CONTACT

NUMBER OF FIELDS	43 UNIVERSITY GRADUATES		46 COLLEGE GRADUATES	
	Number	Per Cent	Number	Per Cent
0				
1				
2	3	7.0		
3	15	34.9	12	26.1
4	21	48.8	24	52.2
5	4	9.3	9	19.6
6			1	2.2
Total	43	100.0	46	100.1

To afford something of a summary and comparison of Tables XXXI*a* and XXXI*b*, there are presented Table XXXII and Figure 10, showing the number of desired fields of English with which these teachers have had some training contact.

The mode in each group is on four fields, but there are large fractions with training in only three fields. The college group has a slightly smaller percentage with training in three fields and a slightly larger percentage with training in five fields

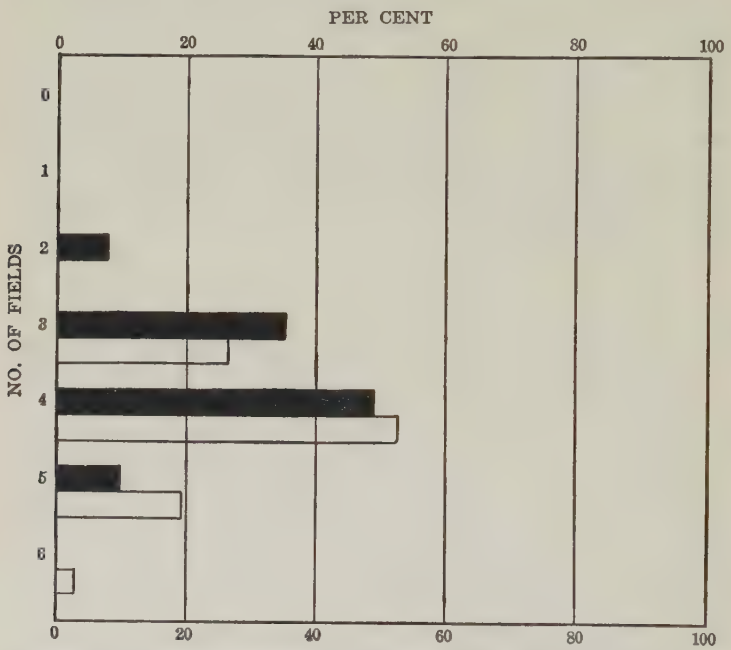


FIGURE 10. DISTRIBUTIONS OF 43 TEACHERS OF ENGLISH (GRADUATES OF THE UNIVERSITY OF MINNESOTA) AND 46 TEACHERS OF ENGLISH (GRADUATES OF FOUR COLLEGES) WITH SPECIALIZED TRAINING OF 36 HOURS OR MORE, ACCORDING TO THE NUMBER OF DESIRED FIELDS OF ENGLISH WITH WHICH THEY HAVE HAD TRAINING CONTACT (black, university group; in outline, college group).

than the university. One person, a graduate of one of the colleges, has had courses in all the six fields named in our standard.

TABLE XXXIII

CLASSIFIED LIST OF ENGLISH COURSES TAKEN BY 98 GRADUATES OF THE UNIVERSITY OF MINNESOTA AND 113 GRADUATES OF FOUR COLLEGES, WITH THE FREQUENCIES OF ENROLLMENT FOR EACH COURSE AND THE AVERAGE NUMBER OF CREDITS EARNED

NAME OF COURSE	UNIVERSITY		COLLEGE	
	Enrollment	Average Credits	Enrollment	Average Credits
COMPOSITION				
Freshman Composition	98	5.7	111	6.0
Advanced General Composition	58	5.8	4	4.3
Short Story Writing	5	3.6	18	3.9
Argumentative Composition	5	5.2	2	4.5
Exposition	1	6.0	5	3.4
Studies in Structure and Style	5	4.8		
Versification	1	4.0		
Play-Writing			1	3.0
Business Correspondence			2	2.0
Imitative Writing	4	3.0		
Seminar in Writing	4	5.5		
JOURNALISM				
Journalism	1	6.0	5	3.0
Newspaper Writing			10	2.9
Editorial Writing			2	3.0
PUBLIC SPEAKING				
Elementary Public Speaking	60	5.7	51	4.0
Extempore Speaking			15	4.5
Argumentation and Debate	1	3.0	6	3.0
Advanced Public Speaking	3	4.7	3	3.7
Elocution and Voice Training			19	3.9
Literary and Dramatic Interpretation	15	5.5	34	7.1
Story-Telling			7	3.7
Play Production	5	4.8		
Teachers' Course in Public Speaking			9	2.1
LANGUAGE				
Old English	24	3.2	33	4.0
Middle English	2	3.0	18	3.0
History of English Language	11	1.0	4	2.3

TABLE XXXIII — *Continued*

Name of Course	University		College	
	Enrollment	Average Credits	Enrollment	Average Credits
LITERARY CRITICISM				
Literary Criticism	6	6.0	16	4.3
History of Literary Criticism			9	3.3
Literary Appreciation			2	1.0
ENGLISH SURVEY COURSES				
Historical Survey of English Literature	85	5.6	70	5.6
The Types of Literature			4	3.8
Masterpieces of Literature	1	6.0	30	5.5
AMERICAN LITERATURE				
American Literature	26	3.8	56	4.6
American Drama			1	3.0
American Novel	4	3.0	1	6.0
ADVANCED ENGLISH LITERATURE				
Chaucer	41	3.2	5	3.0
English Literature (600–1600)			11	5.5
Medieval Allegory	2	2.5		
Metrical Romances of Middle Ages	2	3.0		
Pre-Elizabethan Drama	2	3.0		
Elizabethan Drama	3	2.7		
Shakespeare	49	3.1	79	4.4
Milton	19	2.9	22	3.0
17th Century Lyrists	6	3.0		
17th Century Prose	4	3.0		
English and Scottish Ballads	1	2.0		
The English Drama	4	5.0	15	5.6
Public Discourse			1	3.0
The Essay			4	4.5
The English Novel	22	3.0	30	3.7
Short Story			4	3.8
Bacon	3	2.0		
Swift and His Time			6	1.0
18th Century Prose	7	4.0		
18th Century Poetry	3	4.0		
The Romantic Movement	13	3.2	8	4.5
Victorian Novel	3	5.3		
Victorian Poetry	20	2.8	31	3.6
Browning			2	3.0

TABLE XXXIII — *Continued*

Name of Course	University		College	
	Enrollment	Average Credits	Enrollment	Average Credits
Victorian Prose			4	3.0
19th Century Prose	14	3.9	13	5.8
19th Century Poetry			2	3.0
Modern Drama	12	3.1		
Recent Poetry	6	3.0		
Bible as Literature	16	2.4	1	3.0
General Reading			2	3.0
Men of Letters, English and American			3	3.0
Unidentified credit	2	3.0		
Teachers' Courses in English	11	2.5	62	2.9

In order that the reader may have a more complete picture of the preparation of the teachers studied in this chapter, there is presented in Table XXXIII, already referred to, a classified list of the courses they have taken, together with the numbers of teachers earning credit in them and the average number of hours of credit which each course represents. The course names appear familiar to any one who has studied college catalogues. This table, more than preceding tables, makes evident the wide variety of courses which constitute the specialized preparation of English teachers. The extended list of titles alone depicts the absence of any settled curriculum established to achieve the function of training for a particular profession. And if one could go back of the titles, we do not know how great differences would be revealed between courses bearing the same name. Table XXXIII seems to parallel Table XXVI of the last chapter in establishing for English as for social studies the lack of curricular definition in the subject-matter training of teachers. The English department

offers courses to serve purely cultural purposes, to meet pre-professional requirements of the various professional schools, and to train journalists, philologists, and many others. The prospective teachers have the entire department thrown open to them in the apparent expectation that they will select what is best for them. We have studied the tabulated results of such a policy and measured it on reasonable standards.

C. Summary with Recommendations

The facts revealed lead to the following conclusions:

1. Measured upon the simple standards for which authority can be found, the training of English teachers who are recent graduates of four accredited representative colleges and one representative state university reveals many serious deficiencies. In particular, a systematic course in the study of literary types is seldom found in their records; appallingly large percentages have had no courses in public speaking, American literature, or the teaching of English.

2. This situation is not due largely to a lack of total credits in the department of English. Even the records of those teachers of super-major training, who constituted more than 40 per cent of the groups investigated, revealed these serious gaps in specialized preparation. The root of the trouble seems to lie largely in a faulty distribution of credits.

3. This faulty distribution of credits, taken in conjunction with the wide variety of courses which the teachers are shown to have taken, signifies the lack of any curriculum for the training of English teachers. A later chapter will make it clear that the institutions on which this statement reflects are representative of colleges and universities the country over.

The writer will digress at this point to remark upon the increasing advantages to be gained from greater and greater

refinement of analysis. It will be recalled that Chapter II made clear the inadequacy of measuring teachers' training by the degrees or diplomas they have. This was done by measuring the training according to the total number of semester-hours taken in the college department corresponding to the subject being taught. Now, Chapters III and IV, by a still more refined analysis, have shown the pitfalls and illusions involved in a measure of such coarseness as that employed in Chapter II. The thoughtful reader must already have a vision of the value of the findings which would result from analyses still more detailed.

As in the case of teachers of the social studies, the remedy which the facts recommend is that of guidance to prospective English teachers in the selection of their courses. But guidance is a temporary remedy. The effective prevention of such ills as we have disclosed, and others of the same nature which are present but invisible, with the coarse instruments which we employed in our observation, depends upon curriculum-making. If we assume that the work of the English teacher requires a high degree of skill and knowledge, we should determine what particular skills and knowledges are necessary and from them derive a curriculum for the training of English teachers. Such a work has been done wholly or in part with scientific precision for the vocations of machinist, secretary, plumber, and others. But for the English teacher, as for the teacher of social studies, not even empirically derived curricula have been set up.

Scientific curriculum-making for the teacher may not arrive for some time to come. But there is much that can be done without further delay. Let the experts who have an intimate first-hand acquaintance with the task of the high school English teacher confer and set up standards which are

simple but a little more definite than those mentioned so apologetically by the national committee quoted at the beginning of this chapter. Let the teacher-certificating and teacher-training authorities accept and require such standards. If all the responsible persons were imbued with the functional philosophy, huge gains could be registered in a short time and high school English teachers could be possessed of the scholarship that is most serviceable in their work.

CHAPTER V

THE PRACTICES OF TEACHER-TRAINING INSTITUTIONS IN GUIDING THE CONTENT TRAINING OF THEIR STUDENTS

The previous chapters have developed at some length the extent and frequency of the teacher's lack of specialized training for the particular subjects he teaches. They have pointed out the responsibility of teacher-training institutions for the existing situation and recommended thoughtful, if not scientific, curriculum-making for the preparation of teachers. It is now pertinent to survey the curricular practices of these institutions in order that we may gain deeper insight into the problem presented by the inadequate preparation of so many teachers. The causes of this deficiency need analysis.

Accordingly, it was with such questions as the following that the writer took up this portion of the investigation: To what extent have definite curricula been established for the training of high school teachers? Do such curricula differentiate according to the subjects to be taught? Is there other control or guidance of the training of teachers in subject matter? To what extent does the major system govern teacher preparation and how well adapted is it to that purpose? Three types of institutions were studied for information on these points — four-year colleges, universities, and state teachers' colleges having four-year curricula. Primarily the sources employed were catalogues of the year 1923–1924. Questionnaires also were submitted to deans of the colleges,

to deans of the schools of education in the universities, and to presidents of the teachers' colleges. Such replies as were received were used to supplement the catalogues, but on the whole not much additional information was gained in this way. Comparison of questionnaire responses and catalogues indicated that the latter give a relatively complete picture of curricular practices.

A. Practices of Separate Four-Year Colleges

Sixty four-year colleges of the North Central and Western states were selected for this study.[1] The list was made up from those institutions which have a department of education but not a school of education, as distinguished by the United States Bureau of Education in its *Educational Directory*, 1924. The number here studied does not include all of the institutions of that type located in the North Central and Western sections, but represents the writer's selection of the ones he considered to be the most firmly established and achieving the highest standards. Previous studies of college catalogues had given him some acquaintance with all of the institutions.

Of the 60 chosen, 6 or 8 may properly be termed universities, each being composed of professional schools in addition to the college of liberal arts, but having the courses in education organized simply as a department of the latter. Eight others of the 60 are federal land-grant colleges, such as the Michigan Agricultural College and the Iowa State College of Agriculture and Mechanic Arts. But the majority of the schools are four-year institutions including in their organization little or no more than the liberal arts college, and the whole group are accordingly referred to as colleges.

[1] The institutions are named in the bibliography, together with the date of the catalogue used.

The geographical distribution of the colleges is given in Table XXXIV.

TABLE XXXIV

STATES IN WHICH THE COLLEGES ARE LOCATED

STATE	NUMBER OF COLLEGES
Michigan	3
Wisconsin	5
Illinois	6
Indiana	5
Ohio	9
Minnesota	3
Iowa	7
South Dakota	4
Kansas	2
Montana	2
Oklahoma	1
Colorado	3
New Mexico	2
Utah	1
California	4
Oregon	2
Washington	1
Total	60

It is indeed appropriate to include such institutions as these in a study of practices in teacher training, for very large numbers of their graduates enter the profession of teaching each year. Koos [1] studied the occupational destination of the graduates of nineteen colleges, representing many sections of the country, and found that more than 60 per cent of those who were one year out were engaged in educational work, while of the graduates ten years out 25 per cent were similarly

[1] Koos, L. V. *The Junior College*, Vol. II, Ch. 21. *Research Publications of the University of Minnesota, Education Series*, No. 5. Minneapolis, Minnesota: University of Minnesota, 1924.

employed. He concludes that " in terms of the first years of service of their graduates, these colleges must be looked upon primarily as teacher-training institutions." In consideration of these facts the reader will recognize the pertinence of an inquiry into the practices followed by such schools in their training of teachers.

The catalogues were first studied to determine the types and the extent of recognition given to the teacher-training function. The investigator did not count as " recognition " the descriptions of courses in education, since only institutions having departments of education had been selected for study. Neither was any account taken of remarks about the bureaus of appointments which most institutions announced themselves as maintaining, although such announcements mentioned their placement of teachers more frequently than their assistance to workers in any other one occupation. All other evidences of recognition of the teacher-training function were classified and the categories tabulated as to frequency of appearance and number of pages devoted to them. This summary appears in Table XXXV. Fifty of the sixty institutions evinced one or more of these types of recognition in their catalogues. One of the remaining ten, however, published a separate bulletin [1] which presented in tabular form the courses that should comprise a major in each of the various departments if the student desired to teach the subject. With each subject were given the other subjects considered most likely to appear in combination with it in the high school teacher's program.

It will be noted that the fifty colleges represented in Table XXXV gave a total of 74.8 pages to recognition of the teacher-training function, an average of 1.5 pages. The range was

[1] St. Olaf College *Bulletin*, June, 1923.

TABLE XXXV

TYPES OF CATALOGUE RECOGNITION OF THE TEACHER-TRAINING FUNCTION

TYPE	TOTAL NUMBER OF PAGES SO DEVOTED	NUMBER OF COLLEGES INVOLVED
1. Description of the institution's facilities for training teachers, generally amounting to an assertion that that function is performed	9.6	14
2. Description of state requirements for certification (concerned in almost all cases only with pedagogical courses, because state requirements have not particularized on subject-matter training) . . .	33.1	44
3. Curricula outlined for training one to teach a particular subject or group of subjects, naming the content courses that should be taken	29.9	11*
4. Advice to student which indicates that choice of subject-matter courses is an important consideration for one who would teach, urging him in some cases to prepare in two or three subjects or giving advice concerning combinations of subjects . .	2.2	7
Total number of pages	74.8	

* Seven are land-grant colleges, and outline curricula for such subjects as agriculture, home economics, and industrial arts.

from 0.2 to 8.2 pages. No attempt was made to equate the pages; the writer simply counted them as they came.

The following excerpts are quoted to illustrate the fourth type of catalogue recognition given in Table XXXV:

It is important that the majors and allied subjects be arranged with some regard to the high school subject or subjects which the student expects to teach. Those intending to teach should consult the professor of education early in their college course to ascertain the specific and general requirements for their chosen calling.

Illinois Wesleyan University

When possible, students are urged to prepare in two or three minor fields, for the reason that many high schools require one teacher to give instruction in several branches.

State University of Montana

Prospective high school teachers should prepare themselves in two or three subjects to meet the conditions in the smaller high schools. The following combinations have been frequently in demand: English and history; Latin and English; Latin and German; French and Spanish; mathematics and science; science and physical training; agriculture and manual training.

Morningside College

Students wishing to prepare for teaching should plan to include in their courses, besides the usual requirements, the following:

(*a*) Two majors, in two logically related subjects which they may be preparing to teach.

Northwestern College

Those who expect to teach in high schools should be prepared in one or two subjects besides the major, to meet the conditions in the smaller high schools. College students who expect to teach will do well to take this need for more than one subject into account.

Simpson College

From Table XXXV it is evident that very few catalogues contain any adequate recognition of the teacher-training function. The first and second types are decidedly inconsequential; the third and fourth types appear all too infrequently. It is significant to mention in connection with the third type that in a study of the catalogues of 227 four-year colleges (no federal land-grant colleges included) representing all parts of the country, Koos [1] found 123 two- and three-year pre-professional curricula outlined, those for medicine, engineering, and law totaling 100. These curricula were published in 74 — almost a third — of the catalogues. He also found a total of

[1] *Op. cit.*, 297.

79 four-year professional curricula appearing in 61, or 27 per cent, of the catalogues. Of these, 20 were for business administration, 14 for engineering, and 33 for home economics. The neglect of similar guidance for the teaching profession is the more striking because of the fact that these institutions are so largely used for the purpose of training teachers. There must be in the minds of those who administer these schools a rather settled conviction that curricular guidance for the teaching profession is not necessary, or that the ordinary requirements of the liberal arts course of study afford all the guidance that is necessary. The evidence of the last three chapters has made sufficiently clear the necessity for unseating any such conviction if progress is to be made in improving educational performance by closing the gap between the teacher's training and his job.

The next type of evidence of functional direction of the prospective teacher's training was sought in the advisory system of the colleges. Even though curricula have not been printed, it seemed possible that adequate guidance might be afforded informally through advice given to each student at or before registration. Following this clue a tabulation of the advisory systems was made, of which Table XXXVI is the result. In noting the totals of this table the reader will see a frequency of 65 reported for the third and fourth years, although there are but 60 colleges under consideration. This apparent discrepancy is due to the fact that in five institutions students in those years seemed to be under two advisory bodies.

The last item in this table shows that the advisory system is less frequently in evidence for freshmen and sophomores than for juniors and seniors. This is no doubt due to the fact that the work of the first two years is more largely

TABLE XXXVI

NUMBER OF INSTITUTIONS EMPLOYING EACH TYPE OF ADVISORY SYSTEM FOR EACH OF THE COLLEGE YEARS

TYPE OF ADVISORY SYSTEM	NUMBER FOR EACH COLLEGE YEAR			
	1	2	3	4
1. System of class officers, class counselors, or class advisory committees	6	6	7	6
2. An assigned adviser	10	10	2	2
3. Major professor	1	9	37	37
4. Dean and head of department of education	1	1	1	1
5. Registrar, who is also head of department of education	1	1	1	1
6. Administrative officials — dean, registrar, or president — assisted by enrolling committee or members of faculty	17	11	5	6
7. System not evident	24	22	12	12
Totals	60	60	65	65

prescribed than that of the last two years, making less advice necessary. It is also evident from the second and sixth categories that underclassmen are more frequently advised by "an assigned adviser" and "administrative officials" than are the upperclassmen. For the latter group the influence of the major system is very much in evidence, since in at least 37 of the 60 colleges they are advised by major professors. As shown by Koos,[1] the predominating practice of the liberal arts college in securing concentration or intensive study in a particular field of knowledge is to require a "major," and the major is most commonly selected at the end of the sophomore year. The present study constitutes further evidence of the influence of the major system.

[1] *Op. cit.*, 279.

In order to identify the advisory system for prospective teachers more certainly, the writer sought by questionnaire and catalogue study for an answer to this question: "Does this advisory system apply to students who are preparing for high school teaching?" The answers were as follows:

Yes	49
No	1
Could not be determined	10
Total	60

To probe the situation still more thoroughly, the following question was studied in the same way: "Does the department of education exercise any control or influence over the election of academic subjects by students who plan to teach?" The count of answers was as follows:

Yes	12
No	41
Could not be determined	7
Total	60

On the whole, the departments of education have their sphere limited to the giving of courses in pedagogy and to advising students concerning the certification requirements of the states in which they are likely to teach. As will be shown in the following chapter, these state requirements are in all but one or two states practically confined to pedagogical training.

The nature of the "control or influence" exercised by the departments of education in the twelve colleges indicated above will be seen in the following quotations or abbreviated statements of practices:

By informing them of courses as outlined by the State Department of Public Instruction.

Questionnaire reply from an Indiana college.[1]

[1] Exact source of replies to questionnaires may not be given because of writer's pledge to those solicited.

(In this connection it will be recalled from previous chapters that the Indiana law of 1923 specifies subject-matter training of teachers more minutely than any other state law.)

It is important that the majors and allied subjects be arranged with some regard to the high school subject or subjects which the student expects to teach. Those intending to teach should consult the professor of education early in their college course to ascertain the specific and general requirements for their chosen calling.

Catalogue, 1924, Illinois Wesleyan University

The Iowa State College catalogue of 1923–1924 presents curricula in agricultural education, and in agriculture and manual training, which are outlined and administered by the department of vocational education.

The influence of the department of education at Luther College is exerted by virtue of the fact that the registrar, who is adviser of all students, is also head of the department of education.

All candidates for the certificate should confer with the department of education not later than the beginning of their second year.

Catalogue, 1923, State University of Montana

All departments in which any student is preparing a major for a teacher's credential require that the student consult the School of Education [subordinate to the college of liberal arts] at the beginning of such work.

Catalogue, 1924, Occidental College

By drawing up individual programs for students.

Questionnaire reply

By giving "information about the best combinations, the combinations most called for in high schools."

Questionnaire reply

Despite the fact that larger numbers of graduates enter the profession of teaching than any other calling, the department of education in these colleges seldom has any authority over

their training. But on the contrary the control of the major professor predominates. Now, the fitness of the latter for the sole exercise of this power may well be called into question. Our contention is that guidance should be given by one who knows the terrain, the opportunities and difficulties of the situations which will confront one. In general, it cannot be expected that the major professor is qualified for this activity. His primary concern must be the advanced subject matter of a single field. He must be a relatively narrow specialist, close to the frontiers of knowledge in his one department, or he cannot perform his primary function of college teacher. To expect him also to be a student of the high school teaching situation and see it whole, is expecting too much. This latter task belongs to the department of education. Accordingly, with this knowledge of conditions to be met, the responsibility for the curricular guidance of prospective teachers should rest primarily with the department of education, not to be exercised, however, without the assistance and advice of those best acquainted with the college offering in subject-matter courses.

The data presented constitute evidence of the failure of the four-year college to differentiate in any adequate way between the students who enter its doors for culture, for liberal training, and those who enter to receive training for the profession of teaching. On the whole we may judge the prevailing view to be that the two purposes are synonymous. Stated another way, any person of liberal education is fitted for teaching. Nothing we can do will so elevate teaching into the ranks of the professions as dispelling this delusion by setting up curricula and providing guidance according to function.

The next step in the analysis of college practices in the training of teachers is the examination of the prevailing mode of

curricular direction — the major system — with a view to determining the extent to which it is adapted to the preparation of teachers in subject matter. In this type of curricular organization the student commonly is required in the first two years to pursue such subjects as will give him some contact with several broad cultural fields, such as natural science, social science, language, literature, and mathematics. In his last two or three years his work is largely elective, but with the provision that one department be selected for intensive study and perhaps one or two others for some advanced work.

Among the sixty colleges here studied the prevalence of the major system is shown in Table XXXVII.

TABLE XXXVII

PRACTICES FOLLOWED BY SIXTY NORTH CENTRAL AND WESTERN COLLEGES IN SECURING INTENSIVE STUDY OF A GIVEN FIELD

1. Number of institutions using the major system . . . . . (50 prescribe 1 major, 1 prescribes 2 majors)	51
2. Number of institutions having multiple curricula . . . . . (All are land-grant colleges)	6
3. Number of institutions achieving some degree of concentration but not to be described by either (1) or (2)	3

Table XXXVIII lists the majors permitted in two or more colleges and shows the frequency with which each appears. Although 60 institutions are studied in this project, it will be noted that Table XXXVIII is based upon 44. Five of the original number are here eliminated because they are Indiana schools and the Indiana law of 1923 prescribes the training of teachers so closely as to leave little opportunity for college initiative in that direction. The three schools referred to under the third rubric of Table XXXVII are eliminated also for the reason that they do not have the major system. The

eight land-grant colleges are not included because six of them do not have the major system and because the group as a whole do not pretend to cover the academic field in their teacher-training activities.

TABLE XXXVIII

MAJORS PERMITTED IN 44 NORTH CENTRAL AND WESTERN COLLEGES WITH THE FREQUENCY OF THE APPEARANCE OF EACH

MAJOR	NUMBER	MAJOR	NUMBER
English	40	Chemistry	38
English Composition	2	Physics	36
English Literature	2	Chemistry and Physics	7
English and Public Speaking	4	Botany	19
Mathematics	43	Zoölogy	19
Latin	39	Biology or Botany-Zoölogy	32
Greek	32	Geology and Physiography	18
Latin and Greek	7	Astronomy	4
German	29	2 or 3 Sciences combined	5
French	38	Philosophy	23
Spanish	32	Psychology	16
German and French	2	Philosophy and Psychology	15
German, French, and Spanish	2	Public Speaking	13
French and Spanish	9	Home Economics	22
History	34	Music	19
Political Science	18	Art	9
History and Political Science	13	Commerce	4
Economics	31	Physical Education	6
Sociology	21	Education	29
Economics and Sociology	12	Education and Psychology	3
History, Political Science, Economics	2	Religion	23
History and Social Science	4	Social Science	5

Table XXXVIII is significant in its revelation of the many inappropriate subject specializations which are offered to prospective high school teachers. For example, in view of the nature of the high school curriculum everywhere in the country, why should any student be offered a major in Eng-

lish composition or English literature, when he most certainly will not have an opportunity to teach either one singly? We note that 32 colleges permit Greek and 29 permit German as majors, though both languages are virtually obsolete as secondary school subjects. Probably not many teachers-to-be specialize in those fields. Nevertheless a few do so, then go out and teach some other subject for which their scholarship is not adequate. In the field of social studies, it will be noticed that large numbers of colleges offer separate majors in political science, economics, and sociology. In view of the fact that these subjects are represented in the high school program only by half-year units or else the three are merged as unified social science, the inappropriateness of such narrow specialization will be readily seen. Yet it is the opinion of the writer that even more of the colleges would be offering these narrow majors if they could do so. A number of the institutions canvassed had too few courses in one or more of those fields to constitute a major, hence such combination majors as history–political science and economics–sociology. Only four schools offer a major in history and social sciences combined, despite the desirability of such a combination, as demonstrated in previous chapters. In the field of natural science as in that of social science, majors in single branches predominate, although no one of the single sciences appears in the high school curriculum to the extent of more than one unit, and only in the large city high schools are there sufficient sections so that a teacher can frequently be privileged to teach one of them only. Almost half the institutions offer separate majors in botany and zoölogy, although they are so closely related as to be taught as one subject in the high school. Geology, or physiography, has been almost entirely driven out of the high school curriculum as a separate subject,

yet teachers have the opportunity to pursue it as a major in 18 colleges. Only 5 schools offer majors composed of a combination of two or three sciences. Among the other majors offered by large numbers of colleges are philosophy, psychology, and religion, none of which constitute suitable preparation for high school teaching. On the whole, it must be evident that the major system, as commonly administered in the colleges, does not adequately prepare teachers.

Confirmation of this evidence of improper use of the major is afforded by a study of the number of hours required to constitute a major. For each major a distribution of the numbers of semester-hours required by the various colleges for its completion was made. Inclusion of this extended data is not essential; only the points of significance will be stated. The modal practice is to require 24 semester-hours for a major, about 30 per cent of the 774 frequencies of majors occurring at that point. The variation in general is between 18 and 30 hours, with a scattering from 32 to 54 hours. This points to an apparent lack of unanimity as to the amount of specialized training the teacher needs in any one field.

It is of interest, also, to note that the distributions for English and Latin majors, subjects represented in the high school program by four units each, correspond very closely to the distributions for chemistry and physics, neither of which may be studied to the extent of more than one year in high school. Of the 44 colleges, 17 establish uniform semester-hour requirements for all majors; that is, all majors must consist of 18 hours in one institution, of 24 hours in another, and so on. So many others of the colleges have *almost* uniform semester-hour requirements for all majors that uniformity in definition of the major within each college may safely be said to be the predominating practice. This means that the pro-

spective teacher is guided toward just as extended preparation for a minor high school subject as for one of greater importance. The whole plan may make for easy bookkeeping by the college credit accountants, but it is ill-founded as far as the achievement of functional scholarship is concerned. And if we are to build curricula on such a fundamental basis as that of social need, administrative and clerical convenience must be a secondary consideration.

One other important factor that must not be omitted in connection with any study of the major system is the part played by the minor or minors. It is clear that the proper combinations of majors and minors might prepare teachers of such broad specializations as social studies, natural science, language, and literature. The actual practice of the colleges is portrayed in the following three tables.

Table XXXIX shows the extent to which the minor is employed by the 51 institutions which prescribe majors. Of these, 29 prescribe 1, 2, or 3 minors. Table XL shows the modal number of hours required for a minor to be 12. In Table XLI we have an analysis of the practices of the 29 colleges prescribing minors, to show the extent to which restric-

TABLE XXXIX

PRESCRIPTION OF MINORS IN THE 51 INSTITUTIONS WHICH PRESCRIBE MAJORS

MINORS PRESCRIBED	NUMBER OF INSTITUTIONS
No minors prescribed	22
One minor prescribed	14
Two minors prescribed	11
Three minors prescribed	3
Option: A second major or two minors	1
Total	51

TABLE XL

NUMBER OF HOURS PRESCRIBED FOR MINORS

NUMBER OF HOURS	NUMBER OF INSTITUTIONS PRESCRIBING
8	1
9	1
10	3
12	15
14	3
15	1
16	3
18	1
Could not be determined	1
Total	29

TABLE XLI

RESTRICTIONS ON SELECTION OF MINOR

DEGREE OR TYPE OF RESTRICTION	NUMBER OF INSTITUTIONS
Large freedom in choice	15
Must be related to major	3
Must be unrelated to major	3
Otherwise restricted	4
A minor required in each of the three groups into which the curriculum is divided	1
One free minor and one minor in same group as major	2
Three minors — one related to major, one unrelated to major, one free choice	1
Total	29

tions are placed on the selection of the minor. It is evident that there is very little use of the minor to support the major, the majority of the colleges permitting the student to exercise large freedom in his choice. Three require the minor to be related to the major and three require that the minor be

unrelated to the major, and so on through a variety of other practices.

The presentation of these facts concerning the use of the minor concludes our evidence on the practices of four-year colleges in the training of teachers. Despite the importance of this function as evinced by the number of college graduates who enter the teaching profession, institutions of this type do not provide special curricula or advisory systems in recognition of this task; they do not differentiate between this function of providing professional training and the function of disseminating general culture; their prevailing curricular organization — the major system — is not administered in such a way as to prepare for high school teaching situations.

B. Practices of Universities

For this study there were selected twenty-six universities [1] of the North Central and Western states. All are institutions which have recognized the function of professional training of teachers to the extent of setting up professional schools for that purpose. The group is composed of 19 state universities, 2 municipal universities, and 5 privately endowed and controlled universities. The list comprises all but a few of those in the territory, which have colleges of education. The ones thus left out of account are institutions for which the investigator chanced to have no catalogue.

The first question to which the investigator addressed himself in this project was: To what extent have these schools outlined four-year curricula to be followed by students in training for high school teaching? The number of schools found to have at least one such curriculum outlined was 16.

[1] The institutions are named in the bibliography, together with the date of the catalogue used.

The catalogue pages thus devoted ranged from .5 to 17.0, and averaged 4.9 for the 16 institutions. Table XLII gives a list of the curricula outlined, with the frequency of their appearance. These curricula do not include the suggestions made in

TABLE XLII

CURRICULA FOR THE TRAINING OF HIGH SCHOOL TEACHERS PUBLISHED IN THE CATALOGUES OF 16 UNIVERSITIES, WITH THE FREQUENCY OF APPEARANCE OF EACH

CURRICULA	NUMBER
English	1
Latin	1
German	1
European history	1
Chemistry	1
Physics	1
Biological science	1
Geology and Physiography	1
Psychology	1
English and history	1
English and Latin	1
English and modern language	1
Latin and modern language	1
Mathematics — physics — chemistry	1
Natural science	4
Social science	1
Agriculture	5
Home economics	11
Industrial arts	10
Music	7
Graphic arts	5
Commerce	5
Physical education	7
Total	69

several catalogues of what should be taken in a single department to train a teacher of that subject. Only formally outlined curricula are here included. Another type of curricular

guidance which appeared in a number of catalogues and was insufficient to be included in Table XLII was the skeleton type called "General Academic Curricula," which could not really be considered as curricula. They indicated year by year the courses or departments or fields in which work was required to achieve the broad cultural training which must be thought of as fundamental to the bachelor's degree, but the specialized training upon which the teacher depends for his professional preparation was simply indicated by "Major . . . 3 hours," or "Major and minor . . . 6 hours," and similar unrefined designations.

Table XLII is first of all significant for its exposure of the paucity of this exact type of curricular guidance, especially in the academic subjects. It appears that in general the philosophy that any person who satisfies the tenets of liberal training is equipped to teach academic subjects in the high school, controls the situation. There is little evidence of the idea of training to specification, of training for exact function. Again, some of the curricula given are clearly futile and ill adapted to the high school situation — German, European history, chemistry, physics, geology and physiography, psychology — as if a beginning teacher had any chance of teaching those subjects alone. Most of the curricula for the training of a teacher in combinations of subjects come from one institution. They show appreciation of the teacher's job, as it has been portrayed in earlier chapters, by requiring the attainment of the kind of scholarship needed.

But of the 69 frequencies with which curricula are outlined, 50, or nearly three fourths, are in the special subjects — newcomers to the high school curriculum. Since it is more obvious that the graduate of the traditional liberal-arts course is not equipped for the teaching of these fields which are with-

out the liberal-arts curriculum and are commonly called "special subjects," special training has seemed more obviously necessary for them. State laws (*see* next chapter) demand it. So the universities set up special curricula for them. But by contrast it appears that, in general, universities have not yet thought it necessary to specify anything as to the training of the teacher of the academic subjects. The great broadening of the fields of knowledge in the liberal arts and sciences has crept upon us so gradually that, even though the major system has been developed to direct liberal education, its application to the training of teachers has not been especially studied.

For further evidence of the exercise of control or guidance over content preparation, the writer sought answer to this question: Do the catalogues dictate or advise training for two or more high school subjects, in recognition of the fact that high school teachers so often do teach two or more subjects? The answer is:

Neither dictate nor advise	9
Dictate	13
Advise	4

Among the universities which "dictate" is Kansas, which does so by dictating the fields in which majors may be taken and including among these such combinations as biological science, physical science, and social science.

The next question was: Are subject-combinations dictated or advised, and if so, which ones in particular? It was found that 15 universities did not dictate or advise any subject-combinations, that 2 gave general advice concerning the desirability of preparing for a likely combination of subjects, and that 9 advised certain specific subject-combinations. Table XLIII lists the particular combinations advised, with

the frequency of their mention. The idea of training teachers for a combination of subjects has evidently received but little recognition.

TABLE XLIII

LIST OF SUBJECT-COMBINATIONS ADVISED, WITH THE FREQUENCY OF THEIR MENTION

Social science	6
Natural science	5
Biological science	4
Mathematics — physics — chemistry	3
Physical science	2
English and history	2
English and Latin	2
English and modern language	2
Latin and modern language	1
English and social science	1
English — Latin — history	1
Mathematics — physics	1
Physics — manual arts	1
Commerce and social science	1
Manual arts and mathematics	1
Music and art	1
Art and home economics	1

To what extent is there other evidence of a feeling of responsibility on the part of schools of education for the subject-matter training of high school teachers? In what other ways is guidance manifested? The study of the catalogues showed that in general while practices vary somewhat, schools of education exert very little real control over the subject-matter training of their students. Most frequently their requirements simply coincide with the major or major-and-minor system of the college of liberal arts. In fact, it seems that the students who are going to teach follow the prescriptions of the college of liberal arts and include the necessary courses in pedagogy as part of their free electives. But even when colleges of

education set up subject-matter requirements distinct from those of the liberal-arts college, there is frequently no assurance that the prospective teachers will meet them. They may graduate in liberal arts instead, taking as much pedagogy as they need to satisfy state requirements for a license, since generally liberal-arts college students may elect as much pedagogy as they want or need — those courses not being recognized as the peculiar property of the school of education and administered only to its own registrants. There is much haziness about this matter in some institutions. The catalogue of James Millikin University indicates that the college of education has a four-year curriculum leading to the bachelor of arts degree; but the register of graduates showed that no one was graduating with that degree. Requirements for the degree read: "The elective points are to be chosen in such a manner that the student will complete a group of three closely related special subjects in liberal arts, including a major subject of 24 to 32 points and two minor subjects of 16 and 8 points, respectively. . . . This requirement is made in view of the fact that frequently the high school instructor is asked to teach two or three related subjects, and hence he should have a thorough knowledge of one subject and some familiarity with the elements of at least two others within the same general field." The advice was good, but apparently no one was taking it.

The following quotations or statements of practice illuminate this discussion somewhat. Some are from catalogues and others are from deans' responses to the question: "Does the college of education exercise any control or influence over the election of academic or teaching (as differentiated from pedagogical) subjects by students who plan to teach? If so, how?"

A good deal of influence is informally exerted by pointing out grouping of subjects likely to be needed by high school teachers of the state.

Questionnaire reply

Students who are planning to teach academic subjects in the high school, such as history, science, mathematics, or foreign languages, register in the College of Art, Literature, and Science.

Questionnaire reply

In view of the fact that high school teachers must often teach more than one subject . . . combinations are suggested for those preparing to teach two different lines of work.

Catalogue, University of North Dakota

Practically none [responsibility] for students specializing for high school teaching.

Questionnaire reply

[The student in the School of Education must take education as a major and complete two teaching minors of 16 hours each in any departments of the College of Arts and Sciences, the choice being approved by the dean of the School of Education. *But*] recommendation for a five-year high school state certificate will be given to . . . graduates of the College of Arts and Sciences who have not less than 16 hours credit in psychology and education. [Thus students who would teach are not required to graduate under School of Education requirements.]

Catalogue, University of Oklahoma

Each candidate for the High School Teacher's Recommendation is expected to . . . complete the required work in at least one teaching major, and one teaching minor, to be selected from the following list. . . . Each of the teaching majors and minors given in the preceding numbered list is to be constituted as stated below. . . . [Exact courses to constitute major and minor in each subject are then listed.]

Catalogue, Stanford University

Below are listed the courses specified by the various departments for the academic majors and minors in the School of Education.

ASTRONOMY

Academic minor (major not offered): Courses . . . . . .
It is recommended that students who wish to combine astronomy with mathematics or physics add course . . . .

BACTERIOLOGY

Academic major: Courses.....
Academic minor: Courses.....

BOTANY

.....

[The beginning of the list, as given, illustrates very well the maldirection that can be given by the various department heads, who do not know the high school situation but are naturally taken up with a particular branch of subject matter.]

Catalogue, University of Washington

The following statements from the different departments indicate the courses which have proved valuable for those who are preparing to teach in high schools.

Catalogue, State University of Iowa

[The various departments of the liberal arts college recommend the courses which should be taken by prospective teachers who major in their departments.]

Catalogue, University of Wisconsin

Courses for each teaching major are determined by heads of departments and the dean of the School of Education.

Catalogue, University of Utah

Students preparing to teach science in Minnesota high schools should qualify to give instruction in two or more sciences, since almost all positions open to graduates require teaching in at least two fields. As a matter of fact most Minnesota schools now require instruction in general science, for which the teacher should be trained in both biological and physical sciences. The following special curriculum in natural science is recommended for those

persons desiring to secure the best preparation for the teaching of high school science. It requires:

1. Completion of 30 hours [quarter hours] of work in one of the four natural sciences: chemistry, botany, animal biology, physics. (On account of the mathematics requirements, students majoring in physics may satisfy the requirement by offering but 25 hours.) In the program above the word *major* means any one of these four subjects.

2. Completion of 15 hours [quarter hours] from one of five natural sciences: chemistry, physics, botany, animal biology, geology. This course is designated a *minor*.

3. Completion of introductory courses in two of three of the courses named under (2) not major or minor.

4. Completion of 10 hours [quarter hours] in chemistry.

[This last excellent example of guidance, coming from the University of Minnesota, is perhaps partially nullified by the fact that the same institution offers separate teachers' certificates (or recommendations) in animal biology, botany, chemistry, and physics. Thus the student is also invited to take a major in one of these narrower fields.] [1]

Catalogue, University of Minnesota

Of the above statements there are five that point to some influence or control over content training by the schools of education. These are the strongest statements and practically the only statements that could be construed as meaning school of education influence. It is evident, that on the whole, university schools of education have not taken up the task of guiding the subject-matter training of their students. Perhaps it would be more accurate to say that they have not yet been given that responsibility. For the school of education is one of the youngest members of the university family and the powers it acquires must be surrendered by older members.

Since the major system of the college of liberal arts is so

[1] Attention is also called to the University of Minnesota certificate in social studies, quoted on pages 84–85.

potent a factor in the determining of teachers' specialized training — whether adopted by the school of education, or, as in most cases, beyond its control — it seemed advisable to study it as was done in the case of the separate four-year colleges. Of the 26 institutions here surveyed, 25 employ the major system, 21 prescribing one major, 3 prescribing two majors, and 1 prescribing education as a major.

Table XLIV gives data similar to that of Table XXXVIII. It is evident at a glance that the same comments can be made

TABLE XLIV

MAJORS PERMITTED IN 25 NORTH CENTRAL AND WESTERN UNIVERSITIES WITH THE FREQUENCY OF THE APPEARANCE OF EACH

MAJOR	NUMBER	MAJOR	NUMBER
English	25	Chemistry	23
Dramatics	2	Physics	21
Journalism	3	Botany	18
Mathematics	25	Zoölogy	18
Latin	25	Biology or Botany-Zoölogy	12
Greek	16	Physiology	9
Latin and Greek	4	Geology and Physiography	17
German	20	Astronomy	6
French	24	Chemistry and Physics	2
Spanish	22	Geography	2
Scandinavian	3	Natural Science	3
French-Spanish	2	Philosophy and Ethics	12
History	22	Psychology	13
Political Science	15	Religion	3
Economics	16	Public Speaking	6
Sociology	11	Agriculture	10
History and Political Science	3	Home Economics	22
Political Science and Economics	2	Industrial Arts	15
Economics and Sociology	2	Music	17
History and Social Science	5	Art	18
Social Science	2	Commerce	12
Education	9	Physical Education	18

of this as of the former table. Undesirably narrow specialization is encouraged in the universities in about the same degree as in the colleges. Very few combination majors are to be found, though it should be mentioned here as with the colleges that in a number of cases, impossible to show in the table, some concessions toward combination are made. For instance, one institution stipulates that of the 30 hours required for a major in mathematics, 10 may be in sciences. In other cases a little Latin may be counted on a Greek major and vice versa, a little political science may be counted on a history major, etc. But wherever there seemed to be a real effort to offer a combination major, that is indicated in the table.

The practice of requiring the same number of hours of training for a major in all subjects is even more common with the universities than with the colleges. Eighteen of the twenty-five represented in Table XLII follow this practice. And the variation between institutions is extreme: two require 16 hours for every major (in one it is a minor, the major being education), three, 18 for every major, while one requires 32 hours for every major. Such a range of hours indicates a deplorable lack of agreement as to the amount of work that constitutes suitable preparation for the teaching of a subject in high school. It shows, probably, that the extent of the major is decided upon without reference to the function for which it is intended, other than the liberal function.

The minor as a factor in the specialized preparation of the teacher must be considered in connection with this study of university policies as it was in connection with the practices of the colleges. Table XLV shows the extent to which the minor is employed by the institutions having the major system, and also the frequency with which the various restrictions are laid upon the choice of a minor.

TABLE XLV

UNIVERSITY PRACTICES IN ADMINISTERING THE MINOR

	NUMBER OF INSTITUTIONS
PRESCRIPTION OF MINORS	
No minors prescribed	8
One minor prescribed	13
Two minors prescribed	4
TYPE OR DEGREE OF RESTRICTIONS PLACED ON SELECTION OF MINOR	
Large freedom in choice	11
Must be related to major	5
Must be unrelated to major	1

The facts presented by this table and the conclusions to be drawn from it are the same as those drawn from Tables XXXIX and XLI. A third of the institutions do not prescribe minors, and of those that do, two thirds permit the student large freedom in his choice. The minor evidently is not used to supplement the major in giving the student command over some broad field of the high school curriculum. Under such a loose arrangement the writer has actually found students specializing in such combinations as German and sociology, economics and chemistry, zoölogy and English.

It is clear that schools of education have not yet taken up the full task for which they should be responsible. Training in subject matter is as important as training in pedagogy in the preparation of a teacher. And in some respects it seems more important to have detailed direction of subject-matter training in the university than in the college, for the reason that university departments present an offering of courses that is so much wider than those of the college department as to make it easier for the student to get on the wrong track.

Judged by the several measures we have sought to present, the universities have made only a few beginnings in the work of curriculum-making which must precede any adequate program of teacher training.

C. Practices of State Teachers' Colleges

In view of the marked tendency in recent years for normal schools to develop into teachers' colleges, granting degrees and giving four-year courses for the training of high school teachers, it seemed decidedly pertinent to examine their practices with reference to the subject under investigation in this essay. It might well be expected that the data to be gained from a study of state teachers' colleges would show a much closer adaptation of curricula to the high school teaching situation than is the case with the colleges and universities. In these latter institutions there are a number of functions to be performed, and confusion might be expected; courses must be given to promote general culture, to afford direct training for a number of professions, or to satisfy the requirements of preliminary training which are set up by the professional schools of medicine, law, engineering, and dentistry. But in the teachers' college there is singleness of aim; all the courses are for the one professional purpose of training teachers. It seemed likely that the practices of such an institution, enjoying so much freedom from complexity of purpose, would afford some excellent patterns.

Accordingly, all the state teachers' colleges of the North Central and Western states,[1] as listed in the 1924 *Educational Directory* of the United States Bureau of Education, were studied by questionnaire and catalogue. Those which were

[1] The institutions are named in the bibliography together with the date of the catalogue used.

found not to have four-year curricula actually in operation were not included. The number studied was thirty-three.

Table XLVI shows the outlined curricula which appeared in the various catalogues, with the frequency of the appearance of each. The number of schools affording this type of curricular direction was sixteen, and for those institutions the average number of pages so devoted was 2.7. The table indicates that guidance of this sort is conspicuously absent, except in the case of the special subjects. The facts are very much like those developed for the universities in Table XLII, and the same comments apply.

TABLE XLVI

THE CURRICULA FOR THE TRAINING OF HIGH SCHOOL TEACHERS PUBLISHED IN THE CATALOGUES OF SIXTEEN STATE TEACHERS' COLLEGES, WITH THE FREQUENCY OF THE APPEARANCE OF EACH

CURRICULA	NUMBER	CURRICULA	NUMBER
English	1	Agriculture	5
Mathematics	1	Home economics	12
Foreign language	1	Industrial arts	6
History	1	Music	5
Geography	1	Graphic arts	3
Physical science	1	Commerce	4
Biological science	1	Physical education	2

In view of the fact that beginning high school teachers may expect to teach more than one subject, is training for two or more high school subjects dictated or advised? The answer is, no, in the case of twenty-three of the teachers' colleges. The remaining ten require majors and minors to be chosen from lists of subjects which include only high school teaching subjects. From these facts it is not surprising that virtually no particular combinations of subjects are dictated or advised.

One institution advises training in the whole field of natural science in order to prepare for the teaching of general science. Another outlines a physical and biological science combination, also a physical science and mathematics combination. Still another institution so limits the choice of first and second minors with each major as virtually to recognize combinations in the natural sciences, social studies, languages and literature, and also to recognize that the applied sciences of agriculture and home economics are related to the pure sciences. Several teachers' colleges mentioned rather broad majors, but these seemed to be inspired in practically all cases by the very slender offering of courses in some departments of related subjects which made it impossible to complete a narrower major. In other words, it seemed a case of curricular expediency.

To secure specialization the major system was employed by twenty-eight of the thirty-three institutions. Table XLVII presents a list of the majors offered, with the frequencies of their appearance. There is a larger proportion of combination majors than were found in either the colleges or universities, but, as just mentioned, that is explained by the poverty of the offering in many of these schools.

The practice of requiring the same number of hours for all majors is almost universal in the state teachers' colleges. It is followed by 21 schools, while 2 vary, and the practice of 5 could not be determined. It is also notable that of the 21 institutions requiring minors, 17 mentioned no restrictions at all upon the choice of a minor. Both of these practices have been discussed in the accounts of college and university direction of subject-matter training in previous pages of this chapter. Both have been shown to indicate a lack of understanding of the high school teaching situation, a need for

the discriminating study which we must have if we are to achieve a functional curriculum.

TABLE XLVII

MAJORS PERMITTED IN TWENTY-EIGHT NORTH CENTRAL AND WESTERN TEACHERS' COLLEGES, WITH THE FREQUENCY OF THE APPEARANCE OF EACH

MAJOR	NUMBER	MAJOR	NUMBER
English	28	Chemistry	15
Mathematics	26	Physics	16
Latin	15	Botany	5
Latin and Greek	1	Zoölogy	4
Latin and Spanish	1	Biology	17
Latin and French	3	Physiography and Geography	16
Greek	1	Geology	1
German	3	Physiology	3
French	13	Chemistry and physics	12
Spanish	9	Chemistry—physics—geology	2
French and Spanish	5	Natural science	7
Foreign languages	1	Nature study	1
Modern foreign languages	1	Mathematics and physics	2
Public speaking	8	Psychology	3
History	14	Education	13
Political science	1	Agriculture	17
Economics	3	Home economics	23
Sociology	1	Industrial arts	22
History and political science	3	Music	18
History — political science — economics	4	Graphic arts	17
Social science	3	Music and art	2
Economics and sociology	4	Commerce	17
History and social science	11	Physical education	20

If the treatment of the state teachers' colleges is short, it is because it does not seem worth while to repeat with the same detail a story that has already been told twice. The practices of these younger four-year institutions do not differ from those of the college and university. They seem rather to have

copied blindly the curricular organization of the older institutions. Probably this is due in some degree to a failure to think functionally in the matter of training of teachers, and, in larger measure, to anxiety for recognition and acceptance as a degree-granting authority. Any departure from tradition would endanger the achievement of the latter purpose.

D. Summary with Recommendations

From the foregoing data on the practices of colleges, universities, and state teachers' colleges in the guidance of the subject-matter training of prospective high school teachers, the following conclusions may be drawn.

1. In each of the three groups very few curricula have been formulated, whereas professional training in other lines than teaching is usually characterized by rather definite curricula.

2. Advice concerning the nature of high school positions and the demands they make for training in subject matter, appears in only a few catalogues. The necessity of preparing for two or more subjects and the desirability of preparing for logical subject-combinations, are seldom mentioned.

3. The guidance of subject-matter training is very generally entrusted to the student's major professor. Such an adviser cannot be expected to know the needs of a high school teacher; his primary interests are naturally on the frontier of a particular division of subject matter, the importance of which he is almost certain somewhat to magnify.

4. The major system is generally used for guiding the scholastic training of high school teachers, and, as used, it is ill-adapted to such a purpose; for

a. Inappropriate and too highly specialized majors are generally permitted.

b. Commonly an institution requires the same number of semester-hours in all majors without regard to the degree to which the high school emphasizes the subject.

c. When a minor is required, its choice is seldom restricted in such a way as to supplement the major in giving the student command over a logical combination of subjects.

5. University schools of education commonly exercise no control over the content side of the teacher's training.

6. The subject-matter training of the teacher is guided with the same system as characterizes liberal training.

The writer does not contend that catalogues tell the complete story of the practices of higher institutions. Some policies may not be so published. Still, the questionnaires revealed very little that was not contained in the catalogues. Furthermore, the number of measures used in this study and the reinforcement which the results of each afford the others are such as to leave little doubt that a fairly accurate picture has been presented. There can be no denying that the subject-matter training of teachers is a neglected field. It seems altogether likely, also, that the conditions portrayed prevail over the entire country. Judging by many previous studies of progressive tendencies in the curricula of higher institutions, we have no reason for expecting to find better conditions in respect to teacher-training in the institutions of the South and East than in those of the twenty-three North Central and Western states here canvassed.

Curriculum-making on the part of all institutions which aspire to train teachers is the remedy toward which all the facts of this chapter point. It must be the kind of curriculum-making which starts with an analysis of the teacher's job.

Those responsible for this work and for the administration of the curricula had best be those who are well acquainted with secondary school conditions. The curriculum-making must proceed on the principle that students need guidance, that the mere throwing open of a large offering does not complete the institution's educational responsibility, that students cannot be expected to make such selections of majors and minors as will equip them properly in logical subject-combinations. The rigid curricular prescriptions of other professional schools illustrate this principle.

First steps in the analysis of the high school teacher's job are presented in the second chapter of this essay. It was on the basis of this analysis that the criticisms and interpretations of the facts developed in this chapter have been made. In order to demonstrate how such an analysis may be reflected in the curricular direction given to prospective high school teachers, the writer will quote at length from the " Curriculum for Secondary-School Teaching " which appears in the 1926–1927 catalogue of the School of Education of the University of Pittsburgh. This curriculum represents the thought of the writer and two of his colleagues [1] based upon the study of teaching positions in Pennsylvania, as reported in Chapter II, and upon careful consideration of the content of the various high school subjects and the preparation needed for them.

After a " Summary of Requirements " and a skeleton curriculum showing year by year the basic requirements in English, natural science, and social studies (contact with which is required for the general culture of the teacher), and the requirements in pedagogical subjects in their proper sequence, the following section appears:

[1] Professors C. A. Buckner and W. W. D. Sones.

Definition and Choice of Majors and Minors

. . . The minors for each major are named in the order of frequency of their appearance with the respective majors in typical high school teaching assignments. The minors given in italics are *required* with the majors which they follow. A major subject and two minor subjects must be selected from the following lists according to the restrictions indicated.

Majors	Minors (choose two)
English	Public speaking, history, social science, Latin, French
History	*Social science*, English, mathematics, biological science, public speaking
Social science	*History*, English, mathematics, biological science, public speaking
Latin	English, French, history, mathematics
French	Latin, English, history, mathematics
Mathematics	Physical science, history, social science, biological science
Physical science	*Biological science*, mathematics, social science, history
Biological science	*Physical science*, mathematics, social science, history
Commercial subjects	
A. Secretarial work	*General business*
B. General business	*Secretarial work*
	Mathematics, English, history, social science
Art, Music, Library training, Home economics, Physical education, Industrial arts	The University of Pittsburgh does not offer majors in these fields, but will accept credits from other institutions to the number of forty. Suitable minors for these subjects may be arranged with the Dean or his representative.

Note: Major or minor subjects not listed above may be offered to meet the requirements of this curriculum only

on approval of the Dean of the School of Education. [It will be noted that only eight academic majors are listed above and the same subjects or fields are offered as minors, with public speaking an additional minor offered with English, history, and social science majors. Such subjects as German and Spanish are not offered as majors or minors because the Pennsylvania market for beginning teachers does not justify such training. But it is conceivable that an experienced teacher might desire to take a bachelor's degree from the School of Education and that some other major or minors than those named would be more appropriate; hence this note.]

[The courses or elements named for each major and minor below, together with the number of credits for each, simply represent a selection from the courses already established and offered by the college of liberal arts. It did not seem advisable to give the course numbers or in many cases the exact names, because numbers and names change from year to year.]

English Major

English composition	8 credits
English literature	6 credits
American literature	6 credits
Courses in periods, types, and authors of English literature	12 credits
Selection from the following is recommended: Victorian Writers, Romantic Poets, Elizabethan Literature, English Novel, English Drama	
Public speaking	6 credits
If public speaking is taken as a minor, none is required in the major.	

Note: All English majors are advised to take an introductory course in English history if their programs permit.

English Minor

English composition	8 credits
English literature	6 credits
American literature	6 credits

Public Speaking Minor

Introductory course	6 credits
Additional courses	6 credits

History Major

Introductory course in medieval and modern history, and six more credits in the history of Western Europe	12 credits
Introductory course in the history of the United States, and six more credits in the same field of history	12 credits
Six additional credits, at least four of which must be in the history of Greece and Rome	6 credits

History Minor

Medieval and modern history	6 credits
History of the United States	6 credits
Advanced courses in the history of Western Europe, the United States, Greece, or Rome	6 credits

Social Science Major

Principles of economics	6 credits
Introductory political science	6 credits
Introductory sociology	6 credits
Additional courses to complete a major of 30 credits composed of not more than 12 credits in any one of the three fields of social science	12 credits

Social Science Minor

Principles of economics	6 credits
Introductory political science	6 credits
Introduction to sociology	6 credits

Latin Major

Cicero and Livy	6 credits
Pliny and Horace	6 credits
Roman history	4 credits
Latin composition	4 credits
Mythology	2 credits
Additional credits	2 credits

Note: Both the major and the minor in Latin assume a prerequisite of four years of high school Latin or the equivalent.

Latin Minor

Cicero and Livy	6 credits
Pliny and Horace	6 credits
Latin composition	4 credits

French Major

Intermediate French	6 credits
Advanced French	6 credits
Speaking and writing French	4 credits
Phonetics	2 credits
Advanced oral and written French	4 credits
Additional reading courses	2–8 credits

Note: The number of additional reading credits will depend upon the amount of credit received for intermediate French taken in high school.

French Minor

Intermediate French	6 credits
Advanced French	6 credits
Speaking and writing French	4 credits
Phonetics	2 credits

Note: The minor may be only 12 credits if intermediate French was taken in high school.

Mathematics Major

Trigonometry, college algebra, and analytic geometry	8 credits
Calculus	8 credits

Synthetic geometry	3 credits
Additional hours	3 credits

Note: All mathematics majors are required to take a course in general physics. This course may be counted toward any science requirement.

Mathematics Minor

Trigonometry, college algebra, and analytic geometry	8 credits
Calculus	4 credits

Physical Science Major

Option A (emphasis on chemistry)	
General chemistry	8 credits
Qualitative and quantitative analysis	8 credits
Organic chemistry	8 credits
Introductory college physics	8 credits
Option B (emphasis on physics)	
Introductory college physics	8 credits
Heat or Light	3 credits
Magnetism and electricity	6 credits
Additional courses in physics	7 credits
General chemistry	8 credits

Physical Science Minor

Introductory college physics	8 credits
General chemistry	8 credits
General geology	4 credits

Biological Science Major

General botany	8 credits
General zoölogy	4 credits
Economic botany	4 credits
Economic zoölogy	2 credits
Human biology	2 credits
Evolution	6 credits
Genetics or Nature study	4 credits

Biological Science Minor

General biology	6 credits
Economic botany	4 credits
Economic zoölogy	2 credits
Human biology	2 credits
General geology	4 credits

[General geology, though a physical science, is included in this minor because it does not appear in the physical science major, and the teacher of general science should have at least a little contact with geology.]

Commercial Subjects — Secretarial Major
(In preparation)
Commercial Subjects — Secretarial Minor
(In preparation)
Commercial Subjects — General Business Major
(In preparation)
Commercial Subjects — General Business Minor
(In preparation)

It will be noticed in the list of majors and minors quoted above that in order to teach the entire field of social studies or the entire field of natural science, students majoring in history are required to take one minor in social science, and vice versa, those majoring in physical science are required to take one minor in biological science, and vice versa. But it is also provided that students may minor in any of these fields *without* taking a major in the complementary field. The reason for this is the fact that there are frequently but one or two classes to be taught in these fields and we must expect them to be taught by teachers whose major preparation has been in very different subjects and whose teaching programs are chiefly in those other subjects. Likewise, the specialists in social studies and natural science need training in a second field in order to be equipped for minor teaching.

It will be noted also in the above definition of majors and minors that they vary in the hour requirements, the majors ranging from 22 to 38 hours and the minors from 12 to 20 hours. This merely represents the best judgment of those who made the definitions, thinking about the nature and content of the various high school subjects. Others, equal or superior in competence, might arrive at different definitions, with different credit totals; but it seems unlikely that any careful thinker on this subject would advocate, for example, a uniform 24-hour major and 12-hour minors such as may now be found in many institutions.

The extended quotation which has been given is a practical example of the method by which the teacher-training institutions of the country may take up the whole task that rightfully confronts them. It suggests how any college or university may act, independently of other institutions and of state authority, to give its graduates who are destined for the teaching profession the scholarship which they need for actual teaching positions. It is a definite departure from the traditional conception of the high school teacher's preparation as liberal education plus a few courses in pedagogy to comply with state law. It is calculated to elevate teaching to a profession, to destroy its "procession" aspect, to give it such dignified standing as characterizes law, medicine, engineering. If schools and departments of education over the country could but realize the facts of mal-preparation in subject matter, and could but analyze their own practices in terms of actual teaching positions, as we have attempted to do in this chapter, they would almost certainly build such curricula as would promote the candidate's sound scholarship in the subjects he teaches, making it, in fact, the teacher's most dependable qualification.

CHAPTER VI

PRESENT PRACTICES IN THE CERTIFICATION OF HIGH SCHOOL TEACHERS

In addition to the teacher-training institution, there is another agency which plays a very important rôle in determining the preparation of the teacher for his work. That is the certificating authority. All through the college, university, and state teachers' college catalogues, the study of which was reported in the last chapter, there was evidence of the influence of certification as a dictator of training policies. It is essential, therefore, to this investigation to study practices of certification and to determine in what degree they may be responsible for the conditions portrayed in Chapters II, III, and IV.

A hundred years ago the certification of teachers was a function performed by the officers of the school district. The past few decades have marked the assumption of this power by town, by county, and finally by the state itself, just as other governmental functions have been centralized during the same period. To-day the state alone, with a few exceptions, grants certificates to high school teachers. A few states permit county superintendents to issue temporary licenses, and in Massachusetts certification is in local hands for all but some forty or fifty of the smaller high schools of the state, recipients of state aid.

The purpose of this study being the determination of present practices in state certification of high school teachers, the

method used was the examination of state laws and regulations of state educational departments pertaining to that subject.[1] These materials were obtained for all states except Montana and New Mexico. Upon endeavoring to classify and tabulate the requirements laid down, in order that central tendencies might be shown, it was found that there were so many minute regulations which varied more or less with each state that classifications could not be effected unless some rules were left out of consideration. Some states make rather minute prescriptions concerning age, residence, character, etc. The prohibition movement is echoed in the requirement of a few states that all teachers be trained in physiology, particularly with reference to the deleterious physical effects of narcotics.

Practically all states grant life certificates. For their issuance, experience is a factor of importance with almost every state, varying numbers of years being stipulated. Furthermore, experience is a factor in some certificates of less than life-duration in many states. And it is such a variable factor that it is left out of consideration in this study.

Other problems in certification which seem to have bred many provisions relate to how a person might be teaching at present through having at an earlier date complied with the requirements of that day, the recognition of teachers trained or certified in other states, the combinations of experience and training which may be presented as qualifications entitling a person to certification, the qualifications necessary for teaching in junior high schools, or two- and three-year high schools, and so on. Such provisions did not lend themselves to tabulation. In view of these difficulties, and in view, also, of the fact that the writer is not so much interested in the prob-

[1] The documents used are listed in the bibliography.

lem of certification in itself as he is in its bearing on teacher-training, he has limited the discussion accordingly.

What training must be presented by a person without teaching experience to entitle him to teach in accredited four-year high schools? For certification purposes most states divide high school teachers into two classes — teachers of academic subjects and teachers of special subjects. Table XLVIII relates to the first of these two groups and is a summary of the general academic training required of them by the different states. In order to make possible to some extent a comparison of the different sections of the country, the data is presented for three geographical groups, as well as for the country as a whole. Furthermore, it will be noticed that for each section two certificates are indicated. That is necessary, for a number of states grant two, both of which are above the nature of a special permit. A large number of states provide for the granting of the latter under conditions where fully qualified teachers cannot be procured. But because of the emergency character of special permits, no tabulation of them was made.

Table XLVIII makes it clear that most states desire the bachelor's degree for their teachers of academic subjects. California is the one state which has a higher standard, requiring one year of graduate work. Of the twelve southern states, only half ask for four years beyond the high school as a requirement for the highest certificate granted to teachers without experience. The one state requiring only one year of college work is Texas. Evidently the standards of the South are lower than those of the other two sections. Among the North Central states, Missouri regularly requires only junior college training for her high school teachers, while Wisconsin grants to the graduates of the two-year course in her normal

schools as good a certificate for high school teaching as to the graduates of her university. In fourteen states a second certificate is granted for less than four years of college training.

TABLE XLVIII

GENERAL ACADEMIC TRAINING REQUIRED FOR TEACHERS OF ACADEMIC SUBJECTS

EXTENT AND CHARACTER OF TRAINING	TWELVE NORTH EASTERN STATES		TWENTY-TWO NORTH CENTRAL AND WESTERN STATES		TWELVE SOUTHERN STATES		FORTY-SIX STATES	
	1st Ctf.	2nd Ctf.	1st Ctf.	2nd Ctf.	1st Ctf.	2nd Ctf.	1st Ctf.	2nd Ctf.
Graduation from 4-year institution plus 1 year graduate work			1				1	
Graduation from recognized 4-year institution	12		19		6		37	
Three years of college work . .		1		1		1		3
Two years of college work . .		4	1	5	4	2	5	11
Two-year normal course . . .			1		1		2	
One year of college work . . .					1		1	
Can be secured on examination (Schooling not specified or specified as much below degree requirement)	1		4		2		7	

There are a number of points concerning the general academic training required which do not appear in Table XLVIII. Many more states than are indicated grant good certificates, first or second grade, for less than four years of college work. These are usually granted on uncertain training plus experience or plus examinations. A reading of the regulations of the southern states reveals a strong tendency to try to induce teachers of high school subjects to get three or four years of advanced training by offering the same kind of certificates as are given to teachers having two years of training, but valid

for longer periods. The inducement does not seem adequate. One result is that the southern states offer a large number of certificates.

Table XLIX introduces another aspect of teacher-training — the requirement in pedagogy. This is, in a measure, a digression, for this essay is devoted to the teacher's command over subject matter; but the evidence here related was not difficult to secure and has such bearing on the professionalizing of teaching, that it seemed not inappropriate to introduce it to complete the picture of certification. Reading through the first item of this table, it will be seen that forty-three of the forty-six states included in this study make some requirement of pedagogical training as a condition of receiving the best certificate obtainable without experience. Forty of the states stipulate a certain number of semester-hours. Noting that the median requirement of these states is 15 hours and bearing in mind that the total number of semester-hours normally required for the bachelor's degree is 120, we may say that the tendency of the states is to require that approximately one eighth of a college course be given to courses in education. The mention of the same particular courses as being necessary elements in the requirement does not recur to any notable degree, practice teaching and educational psychology being stipulated more frequently than any others, although only eight times each.

Comment on other items in the table is not necessary. But, taking the table as a whole, it seems quite evident that the country in general has accepted the view that the high school teacher must be trained in the *how* of teaching, that mere advanced cultural experiences are not enough, that the science of education has made sufficient progress to be recognized as an essential component of the teacher's training. High school

TABLE XLIX

PEDAGOGICAL TRAINING REQUIRED FOR TEACHERS OF ACADEMIC AND SPECIAL SUBJECTS

PEDAGOGICAL TRAINING	TWELVE NORTH-EASTERN STATES	TWENTY-TWO NORTH CENTRAL AND WESTERN STATES	TWELVE SOUTHERN STATES	FORTY-SIX STATES
I. *For Best Certificate Given without Experience*				
Number of states requiring some training of this kind	11	22	10	43
Number of states requiring a certain number of semester-hours	9	22	9	40
Range of hours	6–20	10–24	6–18	6–24
Median number of hours	13	15	18	15
Particular courses specifically required:				
Practice teaching	2	5	1	8
Educational psychology	4	4		8
Principles and Methods of Teaching	2	4		6
Psychology		6		6
Secondary education	3			3
II. *For 2nd Grade Certificates and Certificates Issued on Examination*				
Number of states involved	8	13	8	29
Number of states stipulating definite number of semester-hours of pedagogical training	3	5	2	10
Range of hours	6	6–20	6–9	6–20
III. *For Certificates for Special Subjects*				
Number of states requiring	8	19	8	35
* Number of states stipulating definite number of semester-hours of pedagogical training	3	9	2	14
Range of hours	10–13	9–18	6	6–18

* Often indefinite, however, as — "courses in the teaching of the subject."

teaching begins to assume the characteristics of a profession. This is not a historical study, but it is safe to say that if the requirements of ten years ago were tabulated, the standards of pedagogical training revealed would be markedly lower, and in many states entirely absent.

TABLE L

DATA RELATING TO CERTIFICATES FOR TEACHING THE SPECIAL SUBJECTS

	TWELVE NORTH-EASTERN STATES	TWENTY-TWO NORTH CENTRAL AND WESTERN STATES	TWELVE SOUTHERN STATES	FORTY-SIX STATES
Number of states requiring that teachers of special subjects be specially certificated to teach them	8	19	8	35
Requirements:				
4-year course of training . . .		1		1
Period of training varying for the several special subjects from 2 to 3 to 4 years	1	4	1	6
2-year course of training . . .	3	9	2	14
1 to 2 years, varying with subject	1			1
One-year course		3	1	4
Indefinite	3	2	4	9

The introduction into the high school curriculum within the past quarter-century of certain subjects for which the ordinary college of liberal arts does not afford content training to teachers, has led thirty-five of the states, according to Table L, to require that teachers of those subjects shall be specially certified to teach them. Not all of these thirty-five states recognize the same subjects as " special," but in general, agriculture, home economics, industrial arts, music, art, and commercial subjects are so designated. Table L shows the

educational requirements that must be met in order to obtain the special certificates. The modal amount of training, it will be noted, is a two-year course, but considerable variation is evident. As regards the length of the period of training, standardization apparently has not proceeded as far as in the certification requirements for the academic subjects; on the whole, the period of training required is not so extended. But such training as is required must be in the subject for which the certificate is granted; that is, the candidate must have pursued an agricultural curriculum, or a music curriculum.

And this brings us to our chief interest in examining certification practices — the degree and character of their influence over content training. It is evident from Table L that as far as the special subjects are concerned, state certificating authorities show a disposition to require training in the specific subjects which are to be taught. This practice we may call subject certification.

What is the corresponding practice in the certification of the teachers of academic subjects? It was the intention of the writer to present a " Table LI " in answer to this question, but the facts were found to be too scarce to lend themselves to classification. In only a few states was there found to be subject certification. The prevailing practice has come in recent years to be called " blanket certification." That is, upon presentation of evidence of having attained the bachelor's degree or such other extent of liberal education as may be stipulated (see Table XLVIII) and having taken certain courses or hours in education (see Table XLIX), the teacher is issued a certificate which permits him to teach any academic subject in the high school. In only a few states is there anything like subject certification, but to the description of such

examples as there are the next few paragraphs will be devoted.

A statement from the Ohio state department of education concerning the high school certificate reads: "To encourage attention to the holder's preparation, the majors and minors (other than education) of the holder are named on the provisional certificate." While there is no force to such a statement, it is at least recognition that the specialized preparation of the teacher is a factor in his performance, and a recommendation that local authorities give consideration to it.

The New York state department of education has recently stated that "After September, 1926, no certificate issued by the state will be considered completely valid for the teaching of the modern foreign languages unless it is supplemented by a special certification by the department that the teacher possessing the license has passed the written examination for credit for oral work in French, German, Spanish, or Italian, or has been exempted from it." [1]

The practices of New Jersey, Connecticut, and Massachusetts all deserve brief mention here, although they can hardly be said to afford desirable patterns. As nearly as could be determined from the regulations, New Jersey teachers are certified to teach only the particular subjects for which they are adequately trained in college courses (adequacy not defined) or on which they pass examinations. Connecticut teachers are certified to teach particular subjects — those in which they are examined and pass. If they have had adequate training they do not have to stand for examination. Adequate training, however, is not defined. To hold a state

[1] PRICE, WILLIAM R. "Certificates of the University of the State of New York in Teaching Foreign Languages." *School and Society*, Vol. 19, p. 375, Mch. 29, 1924.

high school certificate in Massachusetts, one must have taken two majors, or one major and two minors, or three minors, selected from the following list:

English	Social studies
Latin	Biological sciences
French	Physical sciences
Spanish	Agriculture
German	Home economics
Mathematics	Manual arts

A major is not less than twelve hours, a minor is not less than six hours. The applicant is certified in the subjects for which he meets these requirements. It can readily be seen that a college graduate could hardly avoid qualifying under such easy conditions, even if he were called upon in a small high school to teach five or six subjects. However, as mentioned at the beginning of this chapter, in most Massachusetts high schools, certification is not exercised by the state at all.

Pennsylvania sets a slightly higher standard, requiring teachers to be certified for particular subjects and granting such certification on the strength of twelve hours' training in each of the subjects.

In California there must be sent to city and county boards of education a recommendation for each prospective teacher from the school in which he has taken his graduate work (California requires one year of graduate work for high school teachers), countersigned by the secretary of the state board of education. "Each recommendation shall state on its face the major and minor subjects which the holder thereof has taken in the institution, or the kind of work the candidate is qualified to do."[1]

[1] Regulations Governing Certification of Teachers, California State Board of Education, *Bulletin* No. 10-A, 1919.

The most advanced of the certification laws, however, is the 1923 law of Indiana, already mentioned several times in previous chapters. It requires the presentation by the candidate of the specified numbers of semester-hours of college credits in any two of the following fourteen subject groups:

I	English	24	
II	Mathematics	21	
III	Latin	24	
IV	French	24	
V	German	24	
VI	Spanish	24	
VII	Social studies	36	(1st option) 24 (2nd and 3rd options)
VIII	Science	40	(1st option) 25 (2nd and 3rd options)
IX	Agriculture	20	Good only for Junior High School grades or small high schools where agriculture, home economics, and industrial arts are not regarded as vocational.
X	Industrial arts	20	
XI	Home economics	20	
XII	Music and Art	20	
XIII	Physical Ed.	20	
XIV	Commercial Subj.	20	

The candidate who presents French, German, or Spanish as a subject group must also present full credits in two other subject groups. The reader will note in the above list that only eight opportunities for specialization in academic subjects are afforded and that two of these are large but closely knit groupings — social studies and science. The number of hours required varies, thus giving evidence of some recognition that a given number of hours does not prepare equally well for all subjects, as was presumably held by the teacher-training institutions studied in the last chapter. The specializations recommended accord well with the needs found in California and Pennsylvania, as presented in Chapter II.

They probably correspond to the positions of beginning teachers the country over, or to what the positions might be with the best of schedule-making.

The work to be taken in these subject groups is so defined as to be the most direct preparation for high school teaching. For example, English is subdivided as follows:

1. Grammar and composition
2. English literature
3. American literature
4. Oral expression

"Of the 24 required hours in English . . . approximately 6 hours should be in each of 1 and 3, 9 hours in 2, and 3 hours in 4." The first option in social studies calls for approximately 12 hours each in American and European history and 12 hours in economics and political science. The second and third options constitute preparation only for history and for social science respectively. Concerning the first option in science, the law states that "Of the 40 required hours of general academic preparation, approximately 10 hours should be in biology or 5 hours each in botany and zoölogy, 10 hours each in chemistry and physics, and 5 hours each in physical geography and human physiology." The second and third options in science are for preparation in biological and physical science respectively.

Why are there not more of such subject certification laws? Presumably because of the still generally accepted assumption that a graduate of a liberal arts college has had such content training as to enable him to teach any of the academic subjects of the high school. Why does this assumption exist? To the writer it seems that it must be a relic of the time when both college and secondary school offered no elective studies. So

long as one curriculum, required of all, existed in the two institutions, the college graduate was sufficiently prepared in the materials of instruction to go back to the high school and teach the entire course of study or any part of it. But with the broadening of the fields of learning and the adding of new ones, the elective system had to be established in both institutions. It became impossible for the students to pursue and master all the fields of liberal training. So to-day our liberal arts colleges endeavor to give each student some contact with several departments and pursue studies in one or two departments at greater length, achieving a "major" and a "minor." Such a person is not fitted to teach the entire range of high school academic subjects or even half of them. Often his major subject may be represented in the high school by only a half-year elective, such as botany or economics. Yet the blanket certificate permits him to teach subjects that he has never studied.

The coming of the special subjects to broaden the college preparatory curriculum of traditional subjects created an obvious problem. It was certain that the possessor of a B.A. degree was not equipped to teach manual training or home economics. Clearly these subjects demanded teachers of special training. Hence subject certification was developed to cope with the problem. But the implications for teacher-training which are apparent in the broadening of the fields of liberal education, seem to receive little attention to-day.

This chapter shows that states have been too slow in recognizing the changed situation. The inadequacy of the training of many teachers, as revealed in Chapters II, III, and IV, must be attributed in part to the certificating powers. No pressure is exerted upon teacher-hiring authorities to secure persons of exact qualification, or upon teacher-training insti-

tutions to prepare candidates for probable high school positions. Such a subject certification law as that of Indiana is calculated to close the too frequent gap between the teacher's training and his program of work. Such a device must impress all as a most potent agency for the promotion of the special scholarship needed by each teacher. It is to be hoped that there will be a speedy awakening to the need of reform and a recognition of the effectiveness of certification as an instrument for achieving it.

CHAPTER VII

REASONS WHY HIGH SCHOOL TEACHERS ARE ASSIGNED SUBJECTS FOR WHICH THEY ARE NOT PREPARED

While teacher-training institutions and teacher-certificating authorities are chiefly responsible for the preparation of high school teachers, the principal and superintendent, who assign the teachers their teaching-subjects, have a large measure of responsibility for the utilization of the teacher's training. In a state with such a certification law as that of Indiana, there is but little leeway for the local authorities to exercise choice or make decisions in this matter. Specialized preparation for each subject taught is required by the state. But, as we have seen, in most states there is no such pressure; teachers are certified for schools rather than subjects (with exception of the special subjects); and this gives each local school administrator wide latitude for the exercise of his own discretion in matching teachers and teaching positions.

That factors other than the teacher's specialized preparation frequently enter into his being selected for a position, or the subject assignment given him, has been amply shown in Chapter II, as also in the Minnesota and Washington studies to which frequent reference was made in that chapter. What are these additional factors? Are they worthy of the priority they are given in the case of many teachers? What remedial measures can be taken in order that they may not eclipse specialized preparation as a factor? To the answering of these questions this chapter is addressed.

In order to secure the necessary factual evidence for this project, the writer took up again the original data on teacher-preparation which was furnished by the high schools of ten teachers or fewer in California and Pennsylvania, and which constituted the evidence presented in Chapter II. For all those schools which had returned complete data, showing preparation and assignment for each teacher, a study was made of the daily program in order to locate those subjects which were being taught by teachers of inadequate preparation. In general, less than twelve hours of training in the college department corresponding to the subject being taught, was considered inadequate. To each principal in whose school such deficiencies appeared, a letter was addressed asking him to state the reasons why the particular subject assignment was made. The blank accompanying each letter gave the name of the teacher or teachers, the subject or subjects for which specialized preparation was inadequate, and the number of semester-hours of training which the teacher had reported in the corresponding college department. The form appeared as follows:

Teacher	Assignment	Preparation in that Department	Reasons for the Assignment
Mr. Blank	Physics Manual Training	3 hrs. 0 hrs.	

In some cases where the teacher in question was exceedingly well prepared for some subject he was not teaching at all, an additional column entitled " Prepared for " was introduced to show that fact, thus making more evident to the principal the lack of correspondence between the teacher's training and his work. In order, also, to secure a more complete statement

of the general difficulties involved in making up the daily schedule, the lower half of the sheet invited " Remarks " with the following parenthetical statement to suggest their nature: " It is suggested that you mention the chief difficulties you find (1) in assigning to a teacher studies for which he is well trained, and (2) in giving him a program which is concentrated in one or two broad fields."

In Table LI the reader will see a tabulation of the reasons for assignment together with a percentage distribution of their frequency of mention. The first item of interest in this table is the list of reasons. Because they are necessarily somewhat abbreviated, some elaboration is advisable to make clear their import. Under the first rubric have been grouped all those expressions of the principals which could be considered as attempts to defend the assignments on the grounds of the teacher's fitness. The value of several of these considerations we must certainly doubt, especially the first one, " Training in high school." An insufficient appreciation of the special background which it is desirable for a teacher to have for the teaching of any subject is evinced in a number of these defences. Examples of " practical experience " are the following: "I have had practical experience with tools " (principal, teaching manual training), and, "Mrs. M. was an expert cook and housekeeper " (teacher of home economics). The following are typical expressions of the " teaching experience " defence: " Mr. K. has had fifteen years of school experience of all types. He has taught both physics and chemistry and is doing good work. So there is nothing the matter with his assignment of subjects." " Has taught for several years with success." " She was teaching Latin when I came here and had the reputation of doing good work." Illustrative of expressions tabulated under I–D are

TABLE LI

REASONS WHY THE VARIOUS SUBJECTS ARE ASSIGNED TO TEACHERS WHOSE SPECIALIZED PREPARATION IS INADEQUATE FOR TEACHING THEM, WITH A PERCENTAGE DISTRIBUTION OF THEIR FREQUENCY OF MENTION

REASONS FOR ASSIGNMENT	PER CENT (222 FREQUENCIES)
I. Preparation of the teacher considered adequate because of	
A. Training in high school	2.25
B. Practical experience	3.15
C. Teaching experience	6.75
D. Teacher is now studying in that field, or intends to prepare in the field	2.25
E. Training (character and source not given)	4.95
F. "Most logical teacher for it"	.45
G. Original report of preparation was in error	1.35
H. College preparation sufficient because of hours in related subjects	5.85
I. Personality of teacher, personal qualifications, etc.	5.85
J. Self-trained	2.70
K. Travel	.90
II. Teachers' preferences, negative and positive	13.05
III. Hiring method	
A. Done too late to get teacher with right combination	2.70
B. Teacher hired for personality and influence	.45
C. Hired by school board without inquiry into special training, or for non-professional reasons	1.80
IV. Principal takes what is left	3.15
V. Subject assignment of preceding teacher passed on, regardless of training of successor	1.80
VI. No reason given	3.60
VII. Decided to give course after teachers had been hired	.45
VIII. Not enough teachers on staff	1.80
IX. Teacher had vacant period at time that it was desirable to schedule class	.45
X. Other teachers had maximum load and no one else to take it	18.45
XI. School too small for a specialist in the department	1.35
XII. No teacher had special preparation	9.45

TABLE LI — *Continued*

Reasons for Assignment	Per Cent (222 frequencies)
XIII. In order to maintain a logical combination of	
A. Natural science	2.25
B. Social studies	1.80
C. English and French	.45
D. Vocational mathematics and shop	.45
Total	99.90
I. Preparation considered adequate (I–A to K)	36.45
II. Reasons (II–IX) Primarily Remediable by the School Administration	29.25
III. Reasons (X–XIII) Primarily Remediable by the Teacher-Training Agencies	34.20

the following: "Mr. M. has been doing special work in Latin." "Miss B. is taking work in Latin." "Because she intends to specialize in these two languages" (Latin and French). Classified under I–E were such unilluminating expressions as "Special training." The following are typical of the statements tabulated under I–H: "He has had lots of physics and chemistry" (teaching biology). "Problems of democracy filled out his schedule and fit more closely with history than with any other subject." "Had preparation in some science" (teaching physical geography). The category I–I covers such reasons as the following: "Miss L. has the personal qualifications to carry on this work; I knew she would work hard to make the course a success" (citizenship). "She is interested in the work, is neat in the kitchen, and an inspiration to girls from unfortunate homes" (home economics). "Since Miss W. is a natural teacher, the work was given to her." Two of the statements classified under I–J are as follows: "Mr. C. can type far above the average" (teaching

typing). " Mrs. L. had read quite widely in this subject " (problems of democracy). Such a statement as " Mrs. D. has travelled and lived abroad " (teaching ancient history) is classified under I–K.

The table shows (II) that teachers' preferences appeared very frequently as reasons for assignment of the various subjects. In some cases it was plain that the teacher was given opportunity to choose; in others he apparently pressed his preference for a given subject despite the superior preparation of other members of the faculty or his own superior preparation in a field he was not teaching; again, the statement was negative, that is, the assignment was made because the other teachers or some particular teacher would not teach the subject. The following quotations illustrate the several variations of this reason for assignment: " This teacher was the only one who would teach these subjects " (community civics, American history, and Latin). " Mr. F. is particularly fond of this work and requested it " (civics, biology). " She found that the subjects she had specialized in were not the ones she cared to teach." " We had no other teacher who would teach Latin." " Miss B. preferred *not* to teach physics."

The three categories in which defects in the hiring method are given as reasons for assignment, may be made more intelligible with the following quotations: " Hired after other assignments of subjects." " Had to have a coach and got one at a late hour." " Secured after school opened owing to crowded classes." " Really wanted her for personality and influence on girls." " Miss D.'s home is near and the school board without inquiring into special training elected her for English and history."

A number of principals were called upon to explain why they had assigned to themselves subjects for which they apparently

were unprepared. The several responses classified under the fourth rubric are illustrated in the following: "I teach what my other teachers cannot." "Principal took the subjects which the other teachers did not want." "I took what was left over after I had placed my teachers where they could do the most good." Thus does the principal play the rôle of stop-gap, of utility performer.

The fifth category of reasons is doubtless related to the second. The older teachers of the staff do not like to have their assignments changed about in order to accommodate a newcomer, so occasionally the latter simply inherits the entire program of his predecessor, however varied that may be.

Few principals are as candid as the one who submitted the reason classified as the ninth in the list. The exact statement was: "Vacant period in the teaching of his subject which corresponded with the time of the physical geography class." If assignments are really made on such grounds with any degree of frequency, we can at least be thankful that there is only one frank admission of it.

The tenth category of reasons appears with more frequency than any other. It suggests the need of many teachers who are prepared to teach several subjects and the existence of many "odds and ends" in the schedule (one or two class sections more than the teacher of a given subject can handle). Typical statements from which the forty-one frequencies were drawn are: "Only teacher available for this subject without overloading other teachers and leaving Miss L. with a very light course." "Miss D. was given history to even up the amount of work." "Crowded schedule of history teacher." "Only available one." "Teacher trained in history overloaded."

The eleventh reason is mentioned only three times and

refers in all cases to inadequate preparation in home economics. The home economics teacher is commonly regarded as a specialist, but for the smallest schools it would seem wise to encourage some teachers to seek a minor of 15 to 20 hours in the subject and plan also to teach one or two other subjects. The Indiana law, granting a certificate on 20 hours of training to teach home economics in junior high schools and small four-year high schools, evidently recognizes the situation.

The twelfth category of reasons differs from the tenth in that it refers to the fact that *no* teacher on the faculty has the necessary specialized preparation. In the tenth category there were teachers with the appropriate training for the subject, but they were not available for the assignment. The number of times the twelfth reason is given is considerable and points again to the necessity of having teachers trained in several subjects.

The thirteenth group of reasons is evidence that a number of principals sense the desirability of maintaining logical combinations of subjects in their assignments and would utilize teachers so trained. Illustrative quotations are: "Science teacher" (teaching biology). "English and French combination" (teaching English). "Our science instructor in charge of laboratory" (teaching biology). "Aim to keep this man in the field of science. Laboratory is small, hence in order to avoid friction, it is put in charge of one man" (teaching biology). "I have just enough work in the sciences for one teacher and naturally Mr. H. is the one to whom to give biology." "Mr. S. has the major portion of his work in history, and, of course, the subject of problems of democracy being a related subject should be handled by a teacher of history." Ten principals account for eleven subject assignments on the basis of these logical subject combinations.

The list of reasons is numerous and varied. There is some evidence of insufficient appreciation of the value of specialized preparation; there is some faulty administration of the teaching schedule; and there is a great deal of evidence that teachers are not being adequately prepared. While some statements mark the principals as unfitted for their task of matching teachers and subjects, there are many others which show the extreme difficulty of the task, the large number of factors beyond the principal's control, and an earnest effort to cope with the problem in a very professional way.

What is the relation between these reasons for assignment and the various school subjects? A tabulation was made to show the frequency with which each of the reasons appeared with each of the subjects. The frequencies, when spread out so widely, were perhaps insufficient to be reliable, but as the table stood, it seemed there was no marked relation between any particular subject and any particular assignment reason.

A question which was addressed to three California high schools brought out a mention of one more factor in influencing the drawing up of the schedule — conflicts in pupil programs — a factor which one might have expected to find mentioned more frequently. The question asked, which came to the writer as he studied the entire subject assignment of the schools, was: "Why not have all English assigned to one teacher instead of three?" Two replies were not clear. "Our program would not adjust itself to it in 1923–1924, but I expect to do so in 1924–1925." "Hard to fix up program; this is the first year we have had to do so and will probably not do so next year." The third reply was the following: "It was the easiest way to avoid 'conflicts' in program of students, and insured prompt attendance by putting it the first subject of the day." Whether or not the purposes were of sufficient

moment to justify such parceling out of classes in English in this 23-pupil high school, the reader is left to judge for himself.

The attention of the reader is invited to the lower part of Table LII where some attempt has been made to group the reasons for assignment. The first group consists of reasons I–A to K, all the reasons why preparation is considered adequate. As we have already seen, many of these are of doubtful worth, but at least they differ from reasons II–XIII in that the latter are admissions of the teacher's lack of specialized preparation. Reasons II–IX seem to be largely remediable by the school administration, as the reader may ascertain by a little study of them. Reasons X–XIII seem primarily to point to inadequate, ill-balanced training, remediable by teacher-training agencies. By no means are these groupings clear-cut or mutually exclusive; they simply represent the investigator's attempt to approximate a distribution of responsibility for the assignment of subjects to teachers who are not properly prepared to teach them.

As indicated at the beginning of this chapter, the principals were given an opportunity to state what they found to be their chief difficulties in assigning to teachers the subjects for which they were well trained, and in giving them programs concentrated in one or two broad fields. Table LII is the summary of their comments on these points. Several made no response, others wrote on matters other than their difficulties, and three or four thought that they had no difficulties, despite the specific examples in their own schools which were given on the same blank.

A considerable number of principals from both states felt that the teachers were inadequately trained, as denoted by the first difficulty mentioned. The second difficulty, " To meet the demand for a variety of subjects," is felt quite notably by

TABLE LII

DIFFICULTIES REPORTED BY PRINCIPALS IN ASSIGNING TO TEACHERS THE SUBJECTS FOR WHICH THEY ARE TRAINED AND LOGICAL COMBINATIONS OF SUBJECTS

DIFFICULTIES	FREQUENCY OF MENTION BY THE	
	Sixteen California Principals	Thirty-two Pennsylvania Principals
I. Teachers must teach more than one subject and it is difficult to find teachers who are sufficiently versatile to handle the right combinations, or, "to obtain teachers who are well prepared in all the subjects they may be called upon to teach"	9	14
II. To meet the demand for a variety of subjects	7	0
III. To give the subjects which will secure for the seniors the units necessary for graduation	1	0
IV. To avoid conflicts in programs of pupils	2	1
V. Principal must teach what is left after teachers have been assigned subjects according to their training or preference	1	1
VI. Not enough teachers on staff	1	2
VII. Late hiring sometimes makes it impossible to get teacher with the right combination	2	0
VIII. Teachers have likes and dislikes	1	1
IX. Special departments not requiring full-time teacher	1	0
X. Rapid turnover of teachers	1	1
XI. "I do not have as much to say as I should in selecting teachers. The board selects and I place as best I can"	0	5
XII. Poverty of the district makes it difficult to find competent teachers at the salaries that can be paid	0	1

the California principals but not mentioned by those of Pennsylvania. In view of the wider offering in the California schools, as mentioned in Chapter II, this is not strange. The eleventh difficulty represents a failure to recognize the pro-

fessional character of the work of school administration. This seems to be a complaint in Pennsylvania but not in California. The scattering mention of other difficulties presents no contrast between the states but contributes two new difficulties which did not appear in Table LI. The fourth one, "To avoid conflicts in programs of pupils," and the tenth one, "Rapid turnover of teachers," suggest more fully than realized before the complications which beset the principal in making up the schedule. As we consider that there was a turnover of 48 per cent of the high school teachers of Wisconsin in 1920–1921, and of 41 per cent in 1921–1922,[1] we can well understand that this necessitates some juggling of subject combinations every year. One principal's comment was: "The turnover in the teaching profession after you have made assignments for one year. You may have a very capable teacher teaching two or three subjects and he leaves or gets a better position and you have to fill the vacancy." Naturally the turnover is higher in the smaller schools where salary schedules are low. It is a matter of surprise to the writer that more principals did not mention this difficulty.

In summarizing the data of this chapter, it must be clear first of all that the principal has many difficulties to contend with in assigning teachers their subjects on the rational basis of their specialized preparation. Many of these difficulties would be removed if the teacher-training institutions would set up genuinely functional curricula, as suggested in Chapter V. But it is also evident that some high school principals do not attach sufficient importance to the accurate matching up of teachers' tasks and training. The writer is fully aware that a teacher should have many qualifications besides specialized

[1] Anderson, C. J. *The Status of Teachers in Wisconsin*, 117. Madison, Wisconsin: State Department of Public Instruction, 1924.

preparation for the subjects taught; he is conscious of such important assets as personality, practical experience, and broad academic interest; but the consideration which should be kept uppermost is that the teacher who excels in all these other qualities will be a far better teacher if he has also the rich background of experience in his subject that is contributed by advanced training in it.

There must be coördination of effort between the institutions which train teachers and the authorities who hire teachers and utilize their training, to the end that the gaps between preparation and teaching subjects may be closed. Such a subject-certification law as that of Indiana is undoubtedly the best and strongest agency for inducing such coördination, and immediate adoption of such laws is certain to prove the most rapid and effectual measure that could be taken. But, pending such action, it is imperative that principals be educated to a higher regard for specialized preparation as a qualification of teachers, that school boards recognize the hiring of teachers to be an activity which they are not fitted to perform, and that those who train teachers should speedily sense the real dimensions of their task. With the coöperation of these agencies we may realize in our teachers the type of scholarship that will improve our educational product.

CHAPTER VIII

CONCLUDING COMMENT

The facts which have been produced through the several lines of inquiry pursued in this investigation may be summarized by saying that they demonstrate unmistakably a lack of appreciation of the value of specialized training in the subjects which the high school teacher is assigned to teach. The following recapitulation of the findings is given in support of this generalization:

1. Studies of the specialized training which teachers have had for the subjects they teach, as measured by numbers of semester-hours in the corresponding college departments, revealed very many instances of inadequate preparation. Especially does this condition exist in high schools of ten teachers or fewer, which are so numerous as to include a large fraction, perhaps half, of the high school teachers of the country. The instances which were taken — from California and Pennsylvania in this investigation, from Minnesota and Washington in previous studies — showed sufficient agreement to make it probable that the conditions revealed are nation-wide in extent, though varying somewhat according to the standards set up by certification requirements. When account is taken of the large number of subjects which teachers in large or small high schools *have* taught, it is quite evident that practically *all* teachers who have taught for any length of time have been assigned subjects for which they must not have been prepared. The lack of standardization in subject-combina-

tions bears further testimony to the insufficient regard for specialized preparation.

2. Closer scrutiny of the preparation of teachers of social studies and teachers of English, through a study of transcripts of their college records, disclosed further inadequacies of specialized preparation. It was made evident that a large number of hours in a given college or university department does not give any assurance that the individual is properly prepared for the teaching of the corresponding high school subject. Very few of the teachers, even though their hours totaled 24 or more, presented well-balanced preparation in all the branches of either of these two fields. Examination of the particular courses pursued (through study of the titles only) showed that the teachers' background in any particular branch of the fields being taught varied widely. In short, it was perfectly clear that the teachers in neither of these fields followed functional curricula in their training for the teaching of a high school subject or group of subjects. While the data pertain only to graduates of a few institutions in one state, all are of high rating. Other projects of the investigation point to the representative character of the findings.

3. Either a failure to guide prospective high school teachers in content training, or mal-performance of that function, characterizes the practices of colleges, universities, and state teachers' colleges. In all three types of institutions very few curricula for this purpose are shown in their catalogues. Advice concerning the nature of high school positions and the demands they make for training in subject matter, appears in only a few catalogues. Guidance is generally effected through the same major system which serves to direct liberal training. As a result, majors which are inappropriate and too highly specialized for teacher-training are generally per-

mitted; an institution commonly requires the same number of hours for all majors, regardless of the extent to which the several subjects are emphasized in high school; and the minor is seldom used to supplement the major in giving the student command over a logical combination of subjects.

4. The certification practices of the various states likewise show a failure to recognize the necessity for specialized training in the subjects to be taught, except in the case of the special subjects. The policy of requiring only a certain standard of general academic training plus a few courses in pedagogical subjects, is widespread.

5. Investigation of the reasons why teachers are assigned subjects to teach for which they are not prepared revealed the many obstacles with which the principal must contend in endeavoring to make up his program on the rational basis of the teachers' specialized preparation. There were many instances, however, in which it was clearly evident that the principal did not place as high a value on adequate training as he should, and some evidence that school boards exercised the hiring authority without any higher professional standards in mind than those required by law.

This study of the facts of inadequate scholarship and the search for the causes of it in the practices of teacher-training, certificating, and hiring authorities, has pointed out a number of remedial measures that may be taken to work improvement over present conditions. Chief among these are the following:

1. The number of small high schools should be reduced. The smaller the school the more difficult is the teacher's program and therefore the less efficient must be the teaching. To the many other disadvantages of the small high school the facts of this investigation add this one more.

2. The adoption of the 6–6 plan of organization in smaller communities would tend to spread the teacher's program vertically rather than horizontally and thereby give him a more homogeneous program.

3. Teachers should be trained to teach two or three subjects. Furthermore, specialization in any one field should not be narrow, but should prepare the teacher in the whole field of science or social subjects, for example, and thus equip him for logical combinations of subjects.

4. Teacher-training institutions must take up the task of formulating curricula for training in the various subjects. It is not enough that students be required to elect a certain number of hours in a department in order to complete a major; the courses taken must be prescribed, and prescribed for the single purpose of training the teacher to teach a given subject to secondary school pupils. Examples of such practice were given.

5. Certification of teachers by subject instead of by school is imperative. Such a practice might be carried out with a completeness that would leave little room for variation in the curricula of the teacher-training institutions. It would limit the freedom of principals in hiring and assigning teachers. The teacher, trained at the outset for his teaching subjects, would feel encouraged to add to his scholarship as the years go by, if again and again he were privileged to teach courses in the same field. At least he would have the opportunity. It seems likely that certification could be made the most potent agency of all in securing a well-trained teacher for every class.

It will be noted that a longer period of training is not advocated as a remedial measure. The facts revealed by the surveys made in this investigation did not suggest such a need.

It is probable, however, that if a comparison had been made between the college graduates and the non-graduates, the latter would have been found suffering a distinct disadvantage: they could hardly have been in training long enough to acquire the necessary specialization in two or three fields. Proper economy of the 120 semester hours which most states require, can no doubt remedy most of the ills pointed out in this research. This is fortunate, for, in the present state of the profession, it is unlikely that a more extended requirement would be feasible over most of the country. The writer does not, however, minimize the importance of securing more extended training than the bachelor's degree represents. He merely asks first for more efficient direction of the undergraduate years.

Specialized preparation must be recognized as an important factor in a teacher's success. But the specialization must not be so narrow that the teacher will have to teach some subjects for which he is untrained, in order to fill out his program. All the pupils deserve a trained teacher in all their subjects. In years gone by, when the secondary school curriculum was entirely prescribed and strictly college-preparatory, and when the college curriculum was also prescribed for all students, the bachelor's degree was the symbol of specialized preparation on the part of the teacher. He was trained to go into the secondary school and teach its entire curriculum.

But the expanding of the fields of learning and the adding of new ones have made a liberal education inadequate as scholarship for teaching. The prospective teacher cannot gain command over all the fields taught in the high school or even over all the academic subjects. If, then, we are to be guided by the doctrine of specific training in the preparation of teachers, we must recognize that the liberal training provided by

the ordinary administration of the liberal-arts college curriculum is insufficient. Rejection of the theory of formal discipline and acceptance of the doctrine of specific training for specific goals has characterized our recent changes in elementary and secondary curricula and our formulation of curricula for professions other than teaching. Let us be consistent; let us make a practical application of modern theory to the situation nearest at hand.

To achieve functional curricula for the preparation of teachers will involve, first of all, a considerable modification of existing notions concerning the proper field of teacher-training. The facts of this investigation show that we have in the past been working on the theory that teacher-training referred only to courses in the methods, principles, aims, and psychology of teaching. That conception prevails at present, with only a slight evidence of a broader vision. Its domination is to be seen in the common practice of educationists of referring to courses in education as " the professional " training of the teacher. Because this essay is based on the assumption that " the professional " training of the teacher includes both the background of subject matter appropriate to the teaching of a given subject and the courses in " how to teach " it, the term " professional " must include both. Accordingly, throughout this essay, courses in education have been termed " pedagogical " for the purpose of referring to them as distinct from training in subject matter.

Now, the rapid development of educational science has absorbed the attention of teacher-training institutions. The rising tide of secondary education has brought a host of problems to be solved. The unfolding of the psychology of individual differences has attracted many to that frontier. The demands of the several states for the presentation of more

courses in education by candidates for certification have contributed to fasten the attention of teacher-training authorities on the pedagogical side of their task. But it is indeed time that professional direction be lent to the subject-matter training of the teacher. It is one of the surest and most tangible means of achieving better educational performance in our schools.

As the better training of high school teachers in subject matter is a national rather than a local or sectional problem, it could be best promoted by national agencies. Urged by such bodies as the National Education Association with its many special departments, the North Central Association of Colleges and Secondary Schools, and the National Society for the Study of Education, the needed improvement could be effected rapidly. But with or without such support, any state can secure better prepared teachers for its own schools by following the example of Indiana. Likewise, any college or university can set up such curricula as will give its own graduates professional training superior to that of the general run of teachers. Upon our success in disseminating among these agencies an adequate conception of the scope of teacher-training, the progress of improving the performance of that function must depend.

The research which has been reported in this essay cannot in any sense be considered a comprehensive investigation of the large problem of improving the scholarship of secondary school teachers. It has, however, seemed desirable to cover somewhat intensively this one aspect of the task; and the improvements suggested by the assembled facts are fundamental and tangible. To secure the utmost value from our present resources is certainly the first step in promoting scholarship.

To secure teachers better trained — trained to specification — in the time now allotted, and to assign them the tasks for which they are especially fitted, seem to be the first conditions to be observed.

There are, however, many other reforms or remedial procedures that readily suggest themselves as having large possibilities for the improvement of teachers in this important qualification. One of the foremost of these is the device employed by California — requiring a year of study beyond the bachelor's degree for certification. Wherever states or local communities can pay salaries sufficient to secure teachers with such training, that is indeed a desirable barrier to raise against poorly trained teachers.

A second means of securing better trained teachers is the establishment of distinctions in salary on the basis of training. A number of cities throughout the country have recently adopted the " single salary schedule," the essential feature of which is the payment of teachers according to the extent of their training, whether the grade taught be the first or the twelfth. These schedules provide compensation for one, two, and three years of graduate school work, and have unquestionably spurred many teachers to secure additional training. Logically, such plans call for a " director of training " in the school system, who will counsel the teachers in their selection of courses and curricula. Otherwise, we shall have sometimes the prospect of teachers being granted salary increases in their present positions for having completed advanced study that is not especially helpful in the work they are doing. Undoubtedly the single salary schedule offers splendid possibilities for the improvement of teacher scholarship. While it makes it possible for the beginning teacher to start with a certain minimum preparation, it holds out for him

a reward for further study, thus recognizing that the teacher should always be a student.

The following questions suggest a third measure. Can we develop a sound scheme for selecting and rejecting candidates for the teaching profession during or before training? What standards of scholarship shall we set up for this purpose without unduly emphasizing that factor, considering that scholarship is only one of the necessary qualifications and that many an " A " student has failed as a teacher? Answers to such questions would doubtless go far toward improving the scholarship of the teaching personnel.

Again, there might be great advantage in a close study of our methods of teaching teachers. Could there be a higher type of learning activity in our teacher-training institutions than that commonly employed — a type which would help to develop in our teachers the scholarship that embodies the spirit of inquiry, the habit of sound criticism, the ability and the disposition to apply principles in new situations, the power to organize and reorganize a whole field of thought in the light of new experience? Not " canned " knowledge, but sound methods of thinking in a given field, should be the teacher's greatest mental asset in the classroom. For the achievement of such ends, should not teachers have followed the " honors " courses, about which we now hear, learning activities which assume far more of intellectual independence, of self-direction, than the ordinary procedure of lectures, reading, and quizzes, which characterize most college courses?

Finally, the writer would call attention to the part which supervision must play in the achievement of an effective scholarship. In general, teachers in our secondary schools lack the stimulation which is begot by helpful criticism and suggestion. Many of them are giving their students a deplorably impover-

ished mental diet without realizing it. Properly assisted and motivated, even the teacher whose formal schooling is insufficient for the subject he teaches may overcome his deficiency by his own study while in service. On the other hand, the teacher whose college credits are numerous in the field he teaches, may teach a relatively barren textbook course, either because of indolence or thoughtlessness, if he does not have high standards held up before him. In either case, the point is that the teacher must always be a student, and that supervision is the instrument which should stimulate and guide the teacher's study and make it of practical use in the schools.

BIBLIOGRAPHY

I. STUDIES OF TEACHER-TRAINING TO WHICH REFERENCE HAS BEEN MADE:

ANDERSON, C. J. *The Status of Teachers in Wisconsin.* Madison, Wis.: Department of Public Instruction, 1923.

HUTSON, P. W. "Training of the High-School Teachers of Minnesota," *Educational Monograph* No. 3. Minneapolis: College of Education, University of Minnesota, 1923.

—— "High-School Teachers of the Social Studies: Their Training and the Subjects They Teach." *Journal of Educational Research*, Vol. 9, 93–108, February, 1924.

KOOS, L. V., and WOODY, CLIFFORD. "The Training of Teachers in the Accredited High Schools of the State of Washington." *Eighteenth Yearbook of the National Society for the Study of Education*, Part I, 213–257.

WETHEROW, E. B. (Prepared by). "Plans for Obtaining Higher Efficiency and Lower Cost of Maintenance of Small High Schools," *Bulletin* No. 56, 1922. Indianapolis: State Department of Public Instruction, 1922. (Summary of a report made by Professor Alexander Inglis, after investigating Indiana high schools in certain aspects.)

II. MISCELLANEOUS REFERENCES THAT HAVE BEEN QUOTED:

BRECK, EMMA J. "Present-Day Needs in the Training of English Teachers." *English Journal*, Vol. 12, 545–556, October, 1923.

California State Board of Education. *Directory of Secondary Schools and Teachers Colleges for the School Year*, 1921–1922. Sacramento, State Board of Education, 1922.

—— Regulations Governing Certification of Teachers, *Bulletin* No. 10-A, 1919. Sacramento, 1919.

DAWSON, EDGAR. *Teaching the Social Studies.* The Macmillan Company.

DUNN, ARTHUR WILLIAM, Compiler, Secretary of Committee on Social Studies of the Commission on the Reorganization of Secondary Education of the National Education Association. "The Social Studies in Secondary Education," United States Bureau of Education *Bulletin*, 1916, No. 28.

HALLECK, REUBEN P., Chairman. "Professional Preparation of High School Teachers." *Proceedings of the National Education Association*, 1907, 523 ff.

HOSIC, JAMES F., Chairman. "Reorganization of English in Secondary Schools," United States Bureau of Education *Bulletin*, 1917, No. 2.

KOOS, L. V. "The Junior College," Vol. II, Ch. XXI. *Research Publications of the University of Minnesota, Education Series*, No. 5. Minneapolis: University of Minnesota, 1924.

PRICE, WILLIAM R. "Certificates of the University of the State of New York in Teaching Foreign Languages." *School and Society*, Vol. 19, 375, March 29, 1924.

United States Bureau of Education *Bulletin*, 1920, No. 19. "Statistics of Public High Schools, 1917–1918."

United States Bureau of Education *Bulletin*, 1922, No. 37. "Statistics of Public High Schools, 1919–1920."

III. LIST OF INSTITUTIONS WHOSE CATALOGUES WERE USED IN COMPILING THE DATA GIVEN IN CHAPTER V, TOGETHER WITH THE DATE OF THE CATALOGUE:

A. Colleges and universities having *departments* of education.

Albion College, 1923–1924
Baker University, 1923–1924
Beloit College, 1923–1924
Butler College, 1923–1924
Carleton College, 1923–1924
Coe College, 1923–1924
Colorado Agricultural College, 1923–1924
Colorado College, 1923–1924
Cornell College, 1923–1924
Denison University, 1923–1924
University of Denver, 1923–1924

DePauw University, 1923–1924
University of Detroit, 1923–1924
Franklin College, 1924–1925
Grinnell College, 1923–1924
Hamline University, 1923–1924
Hiram College, 1923–1924
Huron College, 1923–1924
Illinois Wesleyan University, 1923–1924
Iowa State College of Agriculture and Mechanic Arts, 1923–1924
Kansas State Agricultural College, 1923–1924
Knox College, 1923–1924
Lawrence College, 1923–1924
Luther College, 1923–1924
Marietta College, 1924–1925
Marquette University, 1923–1924
Michigan Agricultural College, 1922–1923
Mills College, 1923–1924
Milwaukee-Downer College, 1923–1924
Monmouth College, 1923–1924
State University of Montana, 1923–1924
Montana State College, 1923–1924
Morningside College, 1923–1924
Mount Union College, 1923–1924
Muskingum College, 1923–1924
State University of New Mexico, 1923–1924
New Mexico College of Agriculture and Mechanic Arts, 1923–1924
Northwestern College (Naperville, Illinois), 1923–1924
Northwestern University, 1922–1923
University of Notre Dame, 1922–1923
Oberlin College, 1923–1924
Occidental College, 1923–1924
Ohio Wesleyan University, 1923–1924
Oklahoma College for Women, 1923–1924
Pomona College, 1923–1924
Reed College, 1923–1924
Ripon College, 1923–1924
Rockford College, 1924–1925
St. Olaf College, 1922–1923
St. Xavier College, 1923–1924
Simpson College, 1923–1924
South Dakota State College of Agriculture and Mechanic Arts, 1923–1924

University of South Dakota, 1923–1924
Agricultural College of Utah, 1923–1924
Wabash College, 1923–1924
Western Reserve University, 1923–1924
Whitman College, 1923–1924
Whittier College, 1923–1924
Willamette University, 1923–1924
Yankton College, 1923–1924

B. Universities having *schools* of education.

Municipal University of Akron, 1923–1924
University of Arizona, 1923–1924
University of Chicago, 1924–1925
University of Cincinnati, 1923–1924
Drake University, 1923–1924
University of Idaho, 1923–1924
University of Illinois, 1923–1924
Indiana University, 1923–1924
State University of Iowa, 1923–1924
University of Kansas, 1924–1925
Miami University, 1922–1923
University of Michigan, 1923–1924
James Millikin University, 1923–1924
University of Minnesota, 1923–1924
University of Nebraska, 1924–1925
University of Nevada, 1923–1924
University of North Dakota, 1923–1924
Ohio State University, 1923–1924
Ohio University, 1923–1924
University of Oklahoma, 1923–1924
University of Oregon, 1924–1925
Leland Stanford Junior University, 1924–1925
University of Utah, 1923–1924
University of Washington, 1923–1924
University of Wisconsin, 1923–1924
University of Wyoming, 1923–1924

C. State Teachers Colleges

Colorado State Teachers College (Greeley), 1923–1924
Western State College of Colorado (Gunnison), 1923–1924
Eastern Illinois State Teachers College (Charleston), 1923–1924

Southern Illinois State Normal University (Carbondale), 1923–1924
Northern Illinois State Teachers College (DeKalb), 1922–1923
Illinois State Normal University (Normal), 1923–1924
Western Illinois State Teachers College (Macomb), 1923–1924
Indiana State Normal School (Terre Haute), 1923–1924
Ball Teachers College (Muncie, Indiana), 1923–1924
Iowa State Teachers College (Cedar Falls), 1923–1924
Kansas State Teachers College of Emporia, 1923–1924
Kansas State Teachers College of Hays, 1923–1924
Kansas State Teachers College of Pittsburg, 1923–1924
Detroit Teachers College, 1925–1926
Western State Normal School of Michigan (Kalamazoo), 1923–1924
Central Michigan Normal School (Mt. Pleasant), 1923–1924
Michigan State Normal College (Ypsilanti), 1923–1924
Northern State Normal School (Marquette, Mich.), 1923–1924
Southeast Missouri State Teachers College (Cape Girardeau), 1923–1924
Southwest Missouri State Teachers College (Springfield), 1923–1924
Northwest Missouri State Teachers College (Maryville), 1923–1924
Central Missouri State Teachers College (Warrensburg), 1923–1924
Northeast Missouri State Teachers College (Kirksville), 1923–1924
Nebraska State Normal School at Chadron, 1921–1922
Nebraska State Teachers College at Kearney, 1923–1924
Nebraska State Teachers College at Peru, 1923–1924
New Mexico Normal University (East Las Vegas), 1923–1924
New Mexico State Teachers College (Silver City), 1923–1924
State Teachers College (Valley City, N. Dak.), 1923–1924
Bowling Green State Normal College (Ohio), 1923–1924
Northern Normal and Industrial School (Aberdeen, S. Dak.), 1923–1924
Oshkosh State Normal School (Wisconsin), 1923–1924
Milwaukee State Normal School, 1924–1925

IV. STATE DOCUMENTS USED IN COMPILATION OF DATA PRESENTED IN CHAPTER VI, "PRESENT PRACTICES IN THE CERTIFICATION OF HIGH SCHOOL TEACHERS":

Alabama: "Rules and Regulations Governing the Examination and Certification of Teachers in Alabama," *Bulletin* No. 32. Montgomery: State Board of Education, Sept. 1, 1922.

Arizona: "Rules and Regulations Governing the Certification of Teachers in Arizona." Phoenix: State Board of Education, August, 1921.

Arkansas: "Rules and Regulations Concerning State and County Teachers' Licenses for Arkansas." Little Rock: State Department of Education, 1923.

California: "Regulations Governing Certification of Teachers," April, 1922. Sacramento: California State Board of Education, 1923.

Colorado: "School Laws Enacted by the Twenty-fourth General Assembly." Denver: State of Colorado, 1923.

Connecticut: "Rules and Regulations Concerning State Teachers' Certificates," *Connecticut School Document*, No. 4, 1923. Hartford: State Board of Education, 1923.

Delaware: "Rules and Regulations for the Certification and Examination of Superintendents, Supervisors, Principals, and Teachers." Dover: State Department of Public Instruction, 1923.

Florida: "Teachers' Examination and Certification Law." Tallahassee: State of Florida, 1923.

Georgia: "Georgia System of Certification." Atlanta: Department of Education, 1923.

Idaho: "Examination and Certification of Teachers." Boise: State Board of Education, April, 1923.

Illinois: "Rules, Regulations, and Program of Examinations for County Certificates." Springfield: State Examining Board, July, 1923.

Indiana: "Teacher Training and Licenses as Determined By the Teacher's License Law of 1923, and Regulations of the State Board of Education," *Education Bulletin*, No. 64. Indianapolis: State Superintendent of Public Instruction, 1923.

Iowa: "Certification of Teachers." Des Moines: State Board of Educational Examiners, July, 1923.

Kansas: "Rules and Regulations Regarding the State Certification of Teachers." Topeka: State Board of Education, 1922.

Kentucky: Mimeographed circular issued by state department of education, Frankfort.

Louisiana: "General Information Concerning the Certification of Teachers in the State of Louisiana." Baton Rouge: State Department of Education, Sept. 1, 1923.

Maine: "Laws of Maine Relating to Public Schools." Augusta: State Commissioner of Education, 1923.

Massachusetts: "Certification of Teachers for State-Aided High Schools," *Circular of Information*, 1920, No. 2. Boston: State Department of Education, June 1, 1920.

Maryland: "Public School Laws," 1922. Baltimore: State Board of Education, June, 1922. (Also an informal circular issued by the state department.)

Michigan: Mimeographed circular issued by the state department of education, Lansing.

Minnesota: "Laws and Rules Governing Certification of Teachers." St. Paul: State Department of Education, January, 1922.

Mississippi: "School Laws of the State of Mississippi." Jackson: State Superintendent of Education, 1922.

Missouri: "Rules and Regulations of the State Department of Education Governing Issuance and Renewal of Certificates to Teach." Jefferson City: State Superintendent of Public Schools, June 1, 1923.

Nebraska: "Educational Bulletin, Containing Digest of Senate File 180, Better Known as the New Certification Law, Passed by the Last Legislature, 1919." Lincoln: State Superintendent of Schools.

Nevada: "Laws and Regulations for the Certification of Teachers." Carson City: State Board of Education, April, 1923.

New Hampshire: "The New Regulations for the Certification of Teachers." Concord: State Board of Education.

New Jersey: "Rules Concerning Teachers' Certificates." Trenton: State Board of Education, 1923.

New York: "Regulations Relating to Teachers' Certificates." Albany: University of the State of New York, November, 1922.

North Carolina: "Regulations Governing Certificates for Teachers in North Carolina." Raleigh: State Board of Education, 1921.

North Dakota: "Laws and Regulations Governing the Certification of Teachers," *Bulletin* No. 4. Bismarck: Superintendent of Public Instruction, July, 1923.

Ohio: Untitled, informal printed circular issued by state department of education, Columbus.

Oklahoma: "Rules and Regulations of the State Board of Education, with the Provisions of the Statutes Governing the Issuance of Teachers' Certificates." Oklahoma City: State Board of Education, May 15, 1923.

Oregon: "Circular of Certification for the State of Oregon." Salem: State Department of Education, 1923.

Pennsylvania: "Certification of Teachers." Harrisburg: The Teacher Bureau, Department of Public Instruction, January, 1922.

Rhode Island: Personal letter from state superintendent of public instruction, Providence.

South Carolina: "Examination and Certification of Teachers." Columbia: State Board of Education, July 1, 1921.

South Dakota: "The School Laws of South Dakota." Pierre: J. Olander Co., 1923.

Tennessee: "Public School Laws of Tennessee (together with leading decisions of the Supreme Court) to July 1, 1923." Nashville: State Commissioner of Education, 1923.

Texas: "Examinations and Certificates," *Bulletin* 160. Austin: State Department of Education, May, 1923.

Utah: "Requirements of Certification of Teachers, Supervisors, and Superintendents." Salt Lake City: Department of Public Instruction, 1923.

Vermont: Mimeographed circular issued by state department of education, Montpelier.

Virginia: "Certification of Teachers," *Supplement* No. 2. Richmond: State Board of Education, April, 1922.

Washington: Mimeographed circular issued by state department of education, Olympia.

West Virginia: "The School Law of West Virginia, 1923." Charleston: State Department of Education, June, 1923.

Wisconsin: "Directions to Candidates for State Teachers' Certificates." Madison: State Department of Public Instruction, 1923–1924.

Wyoming: "Certification of Teachers," *Bulletin* No. 8, Series B. Cheyenne: State Department of Education, 1922.

APPENDIX A

Name of school..... County.....

4-yr. or 6-yr. high school?.....Number of Students?.....

Length of period in minutes?.....

FIRST-SEMESTER PROGRAM, 1923–1924

Direction: Fill in the names of the teachers across the top of the form. Write the names of the subjects in the appropriate squares, and indicate the grade of the pupils in the course by the Roman numerals, I, II, III, IV, as, Algebra I, Physics IV, etc.

Period						
1st						
2nd						
3rd						
4th						
5th						
6th						
7th						
8th						

Do you desire a summary of this investigation?.....

.....
Principal

[Blank for second-semester program was similar]

APPENDIX B

To California high school teachers:

For the states of Minnesota and Washington studies similar to the one represented by this questionnaire have been made and published. The findings are of great significance to teachers, administrators, colleges of education, and state certification authorities — to all who are interested in dignifying and professionalizing the work of teaching. It is often stated that the situation in California, as regards teachers' preparation and programs of work, is superior to that of most other states. The writer has undertaken to determine the extent to which that is true. In order to secure facts comparable to those already published for Minnesota and Washington a few minutes' coöperation from you is requested. Will you lend your assistance to this project to the extent of filling in the desired information and turning in this questionnaire to your principal? A summary of the results of this study will be sent to your school.

Very sincerely yours,
P. W. Hutson
Assistant Professor of Secondary Education
University of Pittsburgh.

Name.....School.....County.....
(Last) (First)

PREPARATION:

High School (Place).....No. Yrs.....Year Graduated.....
Normal (Place).....No. Yrs.....Year Graduated.....
College.....No. Yrs.....Year Graduated.....
Post Graduate.....Degrees held.....
(Institution)

STATEMENT OF COLLEGE CREDITS: Indicate the total number of hours of credit earned in normal school or college, undergraduate and graduate, in each of the following subjects. (An hour is here understood to be an hour of recitation or lecture per week during a half school year of approximately 18 weeks. In case you have had quarter instead of semester hours, report ⅔ the number).

	Under-grad.	Grad-uate		Under-grad.	Grad-uate
English	.....	.....	Astronomy	.....	.....
Mathematics	.....	.....	Physiology	.....	.....
Latin	.....	.....	Philosophy and Ethics	.....	.....
Greek	.....	.....	Psychology (not Educ'l)	.....	.....
German	.....	.....	Public Speaking	.....	.....
French	.....	.....	Agriculture	.....	.....
Spanish	.....	.....	Home Economics	.....	.....
History	.....	.....	Shop Work and Mech. Drawing	.....	.....
Polit. Science	.....	.....	Music	.....	.....
Economics	.....	.....	Graphic Arts	.....	.....
Sociology	.....	.....	Commercial (other than Economics)	.....	.....
Chemistry	.....	.....	Physical Education	.....	.....
Physics	.....	.....	Education	.....	.....
Botany	.....	.....	.....	.....	.....
Zoölogy	.....	.....			
Physiog. and Geology	.....	.....			

Indicate foreign languages studied in high school with number of year units earned:
Latin.....German.....French.....Spanish.....Greek.....

CLASSES YOU ARE TEACHING DURING THE CURRENT YEAR

Subject	Indicate 1st or 2nd Semester	Periods per Wk.	Weeks in Course
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....

Name other high school subjects you have taught in previous years.....

.....

INDEX

Advisory systems of colleges, 117–119
Agriculture, specialized training of teachers in, 46, 49
Art, specialized training of teachers in, 46, 49
Assignments, reasons for, when teachers' specialized preparation is insufficient, 168–180

Biology. *See* Sciences.
Botany. *See* Sciences.
Breck, Emma J., on standards for training of the English teacher, 89–91

California, general treatment of teachers' daily programs in small high schools of, 12–41; schools solicited for coöperation in investigation, 7–9; "union high-school" movement, 10, 16; high-school enrollment according to size of staff, 12; number of subjects which teachers are teaching, 12–20; number of subjects which teachers have taught, 19–20; curricular offering wider than in Pennsylvania, 15; number of classes that teachers are teaching per day, 20, 22–25; number of preparations that teachers must make per day, 25–27; number and character of subject-combinations in teachers' programs, 27–41; breadth of curriculum in small high schools of, 37, 41; requirements for certification in, 42–43, 156, 163; specialized training which teachers have had, 43–51; percentages of teachers who have degrees, 50–51; special training of teachers of general science analyzed, 51–53; proportion of population in high school, 55; special training possessed by teachers of unified social science, 68–69; data secured from, showing why teachers are assigned subjects for which they are not prepared, 168–180
Carleton College, 69, 92. *See also* Minnesota colleges.
Catalogues, data on practices of four-year colleges, universities, and teachers' colleges secured from, 111–153
Certification of teachers, requirement in California, 42–43; requirement in Pennsylvania, 43; by subject advocated, 56–57, 165–167; requirements for teaching natural science in Indiana, 53, 165, social studies, 84, 165, and English, 88–90, 165; analysis of nation-wide practices in, 154–167
Chemistry. *See* Sciences.

Classes, number that teachers are teaching per day, 22–25
Colleges, practices of, in teacher-training, 112–128; their recognition of the teacher-training function, 114–116; advisory systems of, 117–119; practices in offering majors, 122–128; practices in administering minors, 126–128
Combinations of subjects. *See* Subject-combinations.
Commercial subjects, training of teachers in, 47
Committee of Seventeen, *Report* of, quoted, 42
Community civics. *See* Unified social science.
Connecticut, practices in certification of teachers, 162
Consolidation of high schools, in California, 10, 16
Curricula, breadth in small California high schools, 37, 41; narrowness in small Pennsylvania high schools, 15, 59; need for functional curriculum in training teachers of social studies, 83–86, of English, 109–110, teachers in general, 145–146, 186; in teacher-training institutions, 111–153; professional and pre-professional, in colleges, 116–117

Degrees, percentages of teachers who have, 50–51

Education, department of, influence on subject-matter training of teachers, 119–121; schools of, their influence on subject-matter training of teachers, 132–136
English, special training of teachers in, 45, 48; combined with social studies, 60; standards for the training of teachers of, 87–91; special training of teachers analyzed, 91–108
Experience, teaching, first acquired in small high schools, 6, 18

General science. *See* Sciences.

Hamline University, 69, 92. *See also* Minnesota colleges.
High schools, size of enrollment, 9, 12; consolidation in California, 10, 55; many of small enrollment in Indiana, 10; proportion of teachers in small high schools, 10–11; influence of size on subject-combinations, 33–34; relation of size to specialized training of teachers, 49–50; reduction of number of small ones advocated, 55–56
History, subject-combinations involving, 40–41, 58; specialized training of teachers in, 45, 48, 71–82
Home economics, specialized training of teachers in, 46, 49
Hosic, J. F. *See* National Joint Committee on English.

Indiana, its many small high schools, 10; its subject-certification law used as criterion for measuring adequacy of training of teachers, 47–49, in general science especially, 53, 165; attempt to standardize subject-combinations in, 59–60; certification in social studies, 84, 165,

in English, 88–90, 165, in general, 164–165
Industrial arts, specialized training of teachers in, 46, 49
Inglis, Alexander. *See* Wetherow, E. B.

Job-analysis, of the teacher's work, 41, 57; to determine the training of the English teacher, 87, of teachers in general, 145–146

Koos, L. V., on the occupational destination of college graduates, 113–114; on pre-professional and professional curricula in colleges, 116–117; on prevalence of the major system, 118. *See also* Washington.

Languages, tendency to subject-combinations in, 41; specialized training which teachers have had, 44, 48
Liberal education, regarded as synonymous with training for teaching, 121, 130; development of elective system in, 165–166

Macalester College, 69, 92. *See also* Minnesota colleges.
Major, prevalence of the, 118; influence of the major professor, 118, 120–121; examination of the major system in colleges, 122–128, in universities, 137–140, in teachers' colleges, 142–143; practice at University of Pittsburgh, 147–153
Massachusetts, practices in certification of teachers, 154, 162–163
Mathematics, absence of stable subject-combinations in, 40; special training of teachers in, 45, 48
Minnesota, study of the training of the high school teachers in, general reference to, 3–4, 6–7; number of subjects the teachers are teaching, 16; number of subjects the teachers have taught, 19–20; inexperienced teachers in the more difficult positions, 18; degree and frequency of recurrence of teachers'subject-combinations, 35–36, 39, 40; specialized training which teachers have had, 43–51; relation between size of high schools and special training of teachers, 50; percentages of teachers who have degrees, 51; special training of teachers of general science analyzed, 51–53; teachers shown to come from many sources, 58; analysis of training of teachers of social studies in, 69–83
Minnesota colleges, location of graduates teaching social studies, 70; special training in social studies of graduates teaching in that field, 71–82; special training in English of graduates teaching in that field, 91–108
Minnesota, University of, location of graduates teaching social studies, 70; special training in social studies of graduates teaching in that field, 71–82; recommendations for training of teachers of social studies, 84–85; special training in English of graduates teaching in that field, 91–108; recommendations for

training of teachers of natural science, 135–136
Minor, college practices in employment of, 126–128; university practices in employment of, 137–140; teachers' college practices in employment of, 142–143; practice at University of Pittsburgh, 147–153
Missouri, practices in certification of teachers, 156
Music, specialized training of teachers in, 46, 49

National Council for the Social Studies, standards of training adopted, 85
National Joint Committee on English, their standards of teacher-training, 87–91
New Jersey, practices in certification of teachers, 162
New York, practice in certificating teachers of foreign language, 162

Ohio, practices in certification of teachers, 162

Pennsylvania, general treatment of teachers' daily programs in small high schools of, 12–41; schools solicited for coöperation in investigation, 7–9; high school enrollment according to size of staff, 12; number of subjects which teachers are teaching, 12–20; number of subjects which teachers have taught, 19–20; curricular offering narrow, 15, 59; number of classes that teachers are teaching per day, 20, 22–25; number of preparations that teachers must make per day, 25–27; number and character of subject-combinations in teachers' programs, 27–41; requirements for certification in, 43, 163; specialized training which teachers have had, 43–51; subject-certification law used as criterion for measuring adequacy of training of teachers, 47–49; percentages of teachers who have degrees, 50–51; special training of teachers of general science analyzed, 51–53; proportion of population in high school, 55; special training possessed by teachers of unified social science, 68–69; data secured from, showing why teachers are assigned subjects for which they are not prepared, 168–180
Physical education, subject-combinations in, 37–38, 41; training of teachers in, 47, 49
Physics. *See* Sciences.
Pittsburgh, University of, curriculum for secondary school teaching quoted and commented upon, 146–153
Preparations, number that teachers must make per day, 25–27
Principal, high school, data secured from, showing why teachers are assigned subjects for which they are not prepared, 168–180
Problems of democracy. *See* Unified social science.
Programs, teachers' daily, in small Pennsylvania and California high schools, 12–41; consolidation of small high schools advocated to improve, 55–56; simplification

and standardization of subject-combinations advocated to improve, 57–61

Questionnaire, employed for securing data, 6, 110–111

St. Olaf College, 69, 92. *See also* Minnesota colleges.
Sciences, subject-combinations in, 33, 35, 37, 40–41, 58; specialized training of teachers in, 46, 48–49; special consideration of training of teachers of general science, 51–53; practices of colleges in offering majors in, 124–125
Six-six school organization, advocated to improve teachers' programs in small high schools, 61–62
Social science, subject-combinations involving, 40–41, 58; specialized training of teachers in, 45, 48; meaning assigned the term, 63; special training of teachers analyzed, 71–82
Social studies, natural character of subject-combinations in, 58; combined with English, 60; meaning assigned the term, 63; related character of, 63–65; special training of teachers analyzed, 71–82; special training, required of teachers in Indiana, 84, recommended by University of Minnesota, 84–85, recommended by National Council for the Social Studies, 85; practice of colleges in offering majors in, 124
Specific training of teachers, general mention of, 2–3, 42, 185–186; for their teaching subjects, 43–51; for foreign languages, 44, 48; number without any, 44–47; of agriculture, industrial arts, home economics, art, music, 46, 49; relation to size of high schools, 49–50; of general science, 51–53; of social studies, 69–86; of English, 91–108; of special subjects, 130–131; for subjects they teach required by University of Pittsburgh curriculum, 146–153, and by Indiana certification law, 164–165; reasons for assignments which do not harmonize with, 168–180
Subjects, number that teachers are teaching, 12–20; number that teachers have taught, 19–20; special training of teachers for teaching each, 43–51; academic, certification requirements for teachers of, 157–165; special, certification requirements for teachers of, 159–161. *See also* Subject-combinations.
Subject-certification. *See* Certification.
Subject-combinations, the general treatment of, 27–41; in sciences, 33, 35, 37, 40–41, 58, 175; complexity of in small high schools, 33–34; significance for teacher-training, 34–35, 41; degree and frequency of recurrence, 35–41; in physical education, 37–38; in Minnesota, 35–36, 39; involving mathematics, 40; in social studies, 40–41, 58, 175; in languages and literature, 40–41, 175; simplification and standardization urged, 57–61; degree to which universities advise them,

131–132; degree to which teachers' colleges advise them, 141–142

Teachers' colleges, practices in teacher-training, 140–144; curricula for training high school teachers, 140–141; practices of in offering majors, 142–143; practices of in administering minors, 142

Teaching positions, some involving too many subjects, 16–18

Teacher-training, significance of subject-combination for, 34–35, 41; institutions urged to train teachers for more than one subject, 57; standards recommended in social studies, 83–85; standards in English, 87–91; practices of colleges, universities, and teachers' colleges in, 111–153

Turnover of high school teachers, 20, 179

Unified social science, defined, 63; special training needed by teachers of, 64–65; special training possessed by teachers of, 68–69

Universities, practices in teacher-training, 128–140; curricula for training high school teachers, 128–131; degree to which they advise subject-combinations, 131–132; practices in offering majors, 137–140; practices in administering minors, 138–140

Washington, study of the training of the high school teachers in, general reference to, 3–4, 6–7; number of subjects the teachers are teaching, 18; teachers shown to come from many sources, 57–58

Wetherow, E. B., bulletin summarizing Inglis' study of small high schools in Indiana, quoted, 10, 60

Wisconsin, turnover of high school teachers in, 20, 179; practices in certification of teachers quoted, 156–157

Woody, Clifford. *See* Washington.

Zoölogy. *See* Sciences.

VITA

The author, Percival W. Hutson, was born in Sparta, Wisconsin, on November 13, 1891. He attended the Sparta High School and was graduated in 1909. He attended Beloit College from 1909 to 1913, and received the B.A. degree in 1913. From 1913 to 1915 he was an instructor in history and public speaking in the Antigo, Wisconsin, high school. From 1915 to 1917 he was principal of the high school at New Ulm, Minnesota. He received the Master of Arts degree from the University of Minnesota in 1923, and the Ph.D. degree in 1925. During the year 1923-24 he was an assistant in the College of Education at the University of Minnesota.